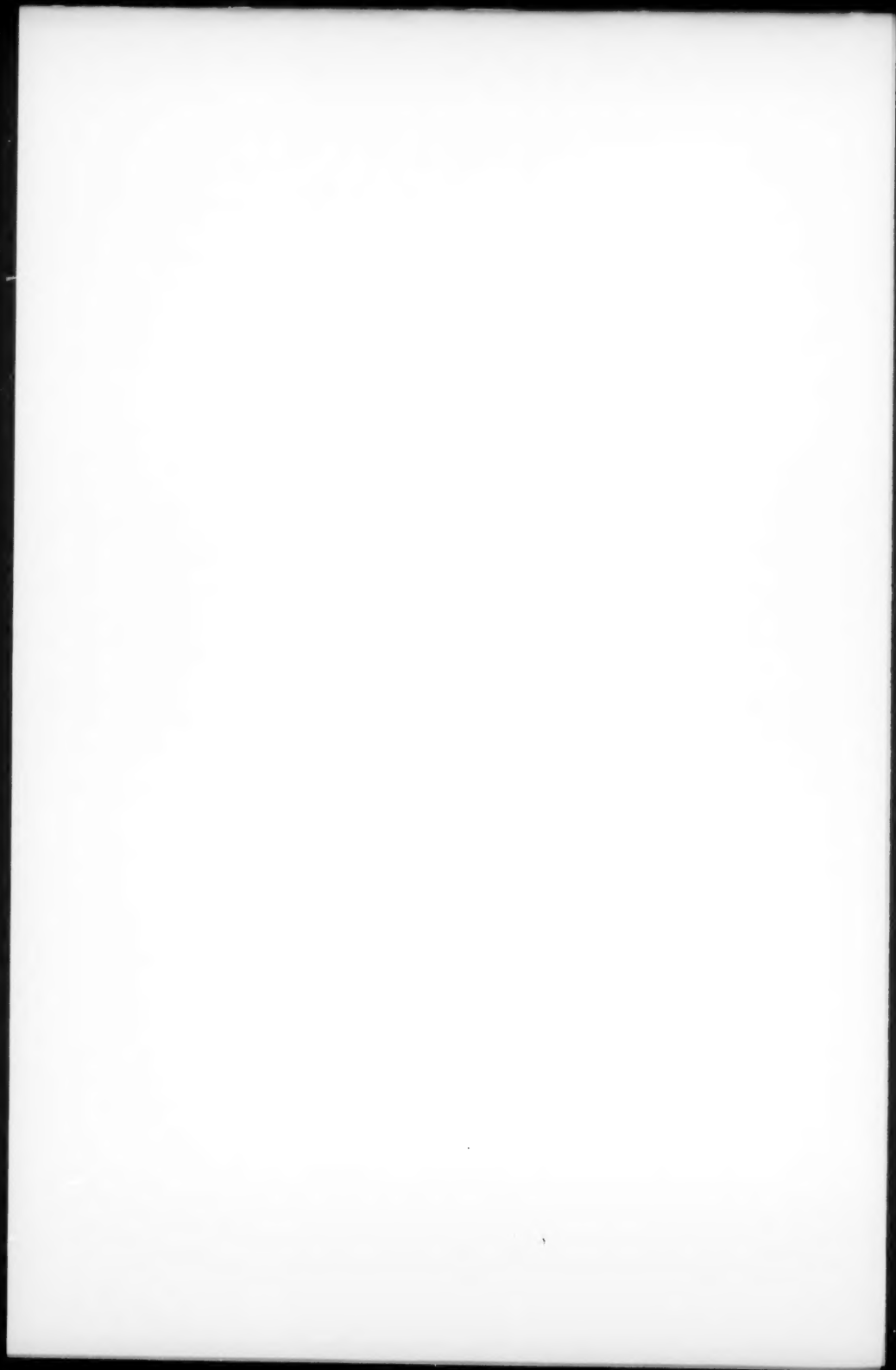


Animal Feed Science and Technology
Volumes 101–110, 2002–2003

Publication overview

<i>Volume 101</i>	2002
<i>Volume 102</i>	2002
<i>Volume 103</i>	2003
<i>Volume 104</i>	2003
<i>Volume 105</i>	2003
<i>Volume 106</i>	2003
<i>Volume 107</i>	2003
<i>Volume 108</i>	2003
<i>Volume 109</i>	2003
<i>Volume 110</i>	2003





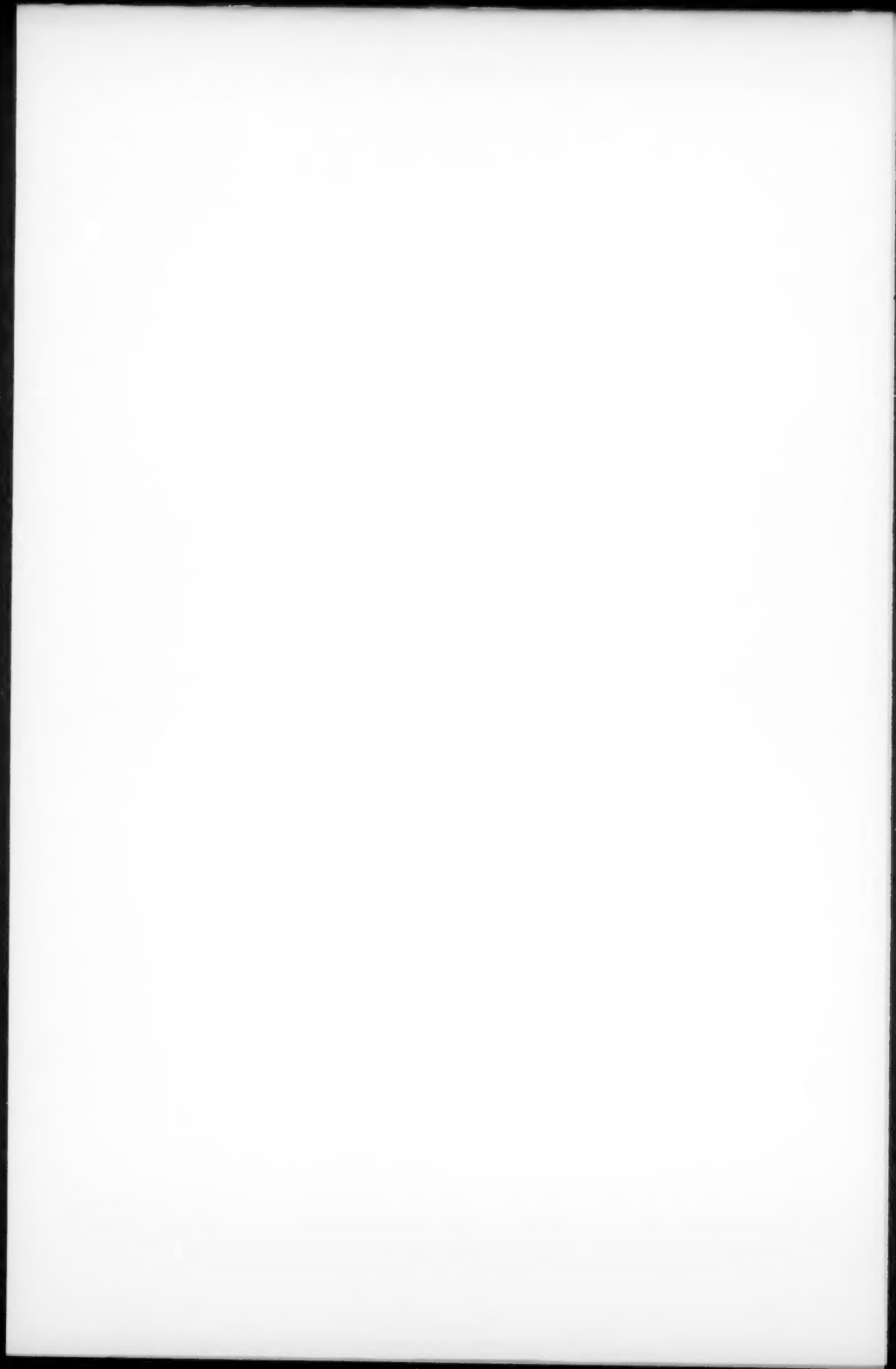
Animal Feed Science and Technology
(2003) 223–238

ANIMAL FEED
SCIENCE AND
TECHNOLOGY

www.elsevier.com/locate/anifeedsci

Author index

*Animal Feed Science and Technology, volumes 101–110,
2002–2003*



A

- Abdullah, N., see Pimpa, O., 104 (2003) 191
 Abreu, J.M.F., see Bruno-Soares, A.M., 107 (2003) 151
 Abreu, J.M.F., see Bruno-Soares, A.M., 107 (2003) 151
 Agbagla-Dobnani, A., see Broudiscou, L.P., 105 (2003) 95
 Agnew, R.E., see Park, R.S., 102 (2002) 151
 Ahvenjärvi, S., see Choi, C.W., 102 (2002) 15
 Ajakaiye, A., Atteh, J.O. and Leeson, S., Biological availability of calcium in broiler chicks from different calcium sources found in Nigeria, 104 (2003) 209
 Al-Ajmi, D., see Kadim, I.T., 109 (2003) 209
 Al-Ani, L., see Zuidhof, M.J., 105 (2003) 225
 Al-Halhal, A.S., see Kadim, I.T., 109 (2003) 209
 Alomar, D., Fuchslocher, R. and de Pablo, M., Effect of preparation method on composition and NIR spectra of forage samples, 107 (2003) 191
 Álvarez Del Pino, M.C., see Hervás, G., 109 (2003) 65
 Ammerman, C.B., see Cao, J., 101 (2002) 161
 Annamalai, K., see Kadim, I.T., 109 (2003) 209
 Arelovich, H.M., Arzadún, M.J., Laborde, H.E. and Vasquez, M.G., Performance of beef cattle grazing oats supplemented with energy, escape protein or high quality hay, 105 (2003) 29
 Arigbede, O.M., see Bamikole, M.A., 105 (2003) 71
 Arijia, I., see Brenes, A., 110 (2003) 201
 Arroquy, J.I., see Klevesahl, E.A., 105 (2003) 5
 Arvidsson, A., see Lindberg, J.E., 104 (2003) 121
 Arzadún, M.J., see Arelovich, H.M., 105 (2003) 29
 Aseltine, M.S., see DePeters, E.J., 105 (2003) 109
 Ashkarian, V.M., see Farran, M.T., 103 (2003) 171
 Aslan, R., see Eryavuz, A., 109 (2003) 35
 Atteh, J.O., see Ajakaiye, A., 104 (2003) 209
 Attwood, G.T., see Min, B.R., 106 (2003) 3
 Aumaitre, A., see Freire, J.P.B., 106 (2003) 119

B

- Babayemi, O.J., see Bamikole, M.A., 105 (2003) 71
 Bach Knudsen, K.E., see Steinfeldt, S., 110 (2003) 185
 Bach, A., see Offner, A., 106 (2003) 81
 Bach, S.J., McAllister, T.A., Veira, D.M., Gannon, V.P.J. and Holley, R.A., Effects of a *Saccharomyces cerevisiae* feed supplement on *Escher-*

- ichia coli* O157:H7 in ruminal fluid in vitro, 104 (2003) 179
 Baidoo, S.K., Yang, Q.M. and Walker, R.D., Effects of phytase on apparent digestibility of organic phosphorus and nutrients in maize-soya bean meal based diets for sows, 104 (2003) 133
 Balcells, J., see Fondevila, M., 101 (2002) 1
 Balcells, J., see Pimpa, O., 104 (2003) 191
 Ballard, C.S., see Mandebvu, P., 105 (2003) 81
 Ballard, C.S., see Mandebvu, P., 108 (2003) 25
 Ballard, C.S., see Uchida, K., 107 (2003) 1
 Bamikole, M.A., Babayemi, O.J., Arigbede, O.M. and Ikhatua, U.J., Nutritive value of *Ficus religiosa* in West African dwarf goats, 105 (2003) 71
 Barbour, E.K., see Farran, M.T., 103 (2003) 171
 BarriosUrdaneta, A., see Fondevila, M., 101 (2002) 1
 Barrios-urdaneta, A., see Fondevila, M., 102 (2002) 93
 Barry, T.N., see Min, B.R., 106 (2003) 3
 Barry, T.N., see Moore, K.M., 104 (2003) 1
 Baucells, M.D., see Fondevila, M., 102 (2002) 93
 Beauchemin, K.A., see Yang, W.Z., 102 (2002) 137
 Becker, K., see Hoffmann, E.M., 106 (2003) 189
 Becker, P.M., van Gelder, A.H., van Wikselaar, P.G., Jongbloed, A.W. and Cone, J.W., Carbon balances for in vitro digestion and fermentation of potential roughages for pregnant sows, 110 (2003) 159
 Beermann, D.H., see Knaus, W.F., 102 (2002) 3
 Behnke, K.C., see DeFrain, J.M., 107 (2003) 75
 Bella, M., see Priolo, A., 108 (2003) 215
 Belmar, R., see Echeverría, V., 101 (2002) 151
 Ben Said, M.S., see Ben Salem, H., 110 (2003) 45
 Ben Salem, H., Salem, I.B., Nefzaoui, A. and Ben Said, M.S., Effect of PEG and olive cake feed blocks supply on feed intake, digestion, and health of goats given kermes oak (*Quercus coccifera* L.) foliage, 110 (2003) 45
 Bencini, R., see Kiteessa, S.M., 108 (2003) 1
 Bernard Luchansky, J., see Piva, A., 106 (2003) 149
 Beynen, A.C., see Lee, K.-W., 106 (2003) 219
 Bhat, M.K., see Colombatto, D., 107 (2003) 201
 Bhatta, R., Shinde, A.K., Vaithyanathan, S., Sankhyam, S.K. and Verma, D.L., Effect of polyethylene glycol-6000 on nutrient intake, digestion and growth of kids browsing *Prosopis cineraria*, 101 (2002) 45
 Biagi, G., see Piva, A., 106 (2003) 149
 Biesalski, H.K., see Zimmermann, B., 104 (2003) 143
 Black, B., see Pluske, J.R., 107 (2003) 129
 Blake, D.P., Hillman, K. and Fenlon, D.R., The use of a model ileum to investigate the effects of novel and existing antimicrobials on indigenous

- porcine gastrointestinal microflora: using vancomycin as an example, 103 (2003) 123
- Blas, E., see Villamide, M.J., 109 (2003) 195
- Block, E., see Mandebvu, P., 108 (2003) 25
- Boccalon, S., see Spanghero, M., 104 (2003) 201
- Boer, H., see Elgersma, A., 108 (2003) 191
- Bogaert, C., see Bravo, D., 108 (2003) 43
- Boros, D., Marquardt, R.R., Guenter, W. and Brufau, J., Chick adaptation to diets based on milling fractions of rye varying in arabinoxylans content, 101 (2002) 135
- Borreani, G., see Valente, M.E., 108 (2003) 181
- Boswall, A.L., see Zaman, M.S., 103 (2003) 163
- Bravo, C., see Brenes, A., 110 (2003) 201
- Bravo, D., Meschy, F., Bogaert, C. and Sauvart, D., Phosphorus availability of oilseed meals determined by the apparent faecal digestibility technique, 108 (2003) 43
- Brenes, A., Viveros, A., Arija, I., Centeno, C., Pizarro, M. and Bravo, C., The effect of citric acid and microbial phytase on mineral utilization in broiler chicks, 110 (2003) 201
- Broudiscou, A.F., see Broudiscou, L.-P., 101 (2002) 183
- Broudiscou, A.F., see Broudiscou, L.P., 105 (2003) 95
- Broudiscou, L.P., Agbagla-Dobnani, A., Papon, Y., Cornu, A., Grenet, E. and Broudiscou, A.F., Rice straw degradation and biomass synthesis by rumen micro-organisms in continuous culture in response to ammonia treatment and legume extract supplementation, 105 (2003) 95
- Broudiscou, L.-P., Papon, Y. and Broudiscou, A.F., Effects of dry plant extracts on feed degradation and the production of rumen microbial biomass in a dual outflow fermenter, 101 (2002) 183
- Brown, W., see Twomey, L.N., 108 (2003) 61
- Brown, W., see Twomey, L.N., 108 (2003) 71
- Brown, W., see Twomey, L.N., 108 (2003) 83
- Brufau, J., see Boros, D., 101 (2002) 135
- Bruno-Soares, A.M. and Abreu, J.M.F., Merit of *Gleditsia triacanthos* pods in animal feeding. Chemical composition and nutritional evaluation, 107 (2003) 151
- Buraczewska, L., see Pastuszewska, B., 106 (2003) 175
- C
- Calsamiglia, S., see Woods, V.B., 110 (2003) 145
- Cameron, D.J., see Moore, K.M., 104 (2003) 1
- Cameron, P.N., see Moore, K.M., 104 (2003) 1
- Cannas, A., Van Soest, P.J. and Pell, A.N., Use of animal and dietary information to predict rumen turnover, 106 (2003) 95
- Cao, J., Henry, P.R., Davis, S.R., Cousins, R.J., Miles, R.D., Littell, R.C. and Ammerman, C.B., Relative bioavailability of organic zinc sources based on tissue zinc and metallothionein in chicks fed conventional dietary zinc concentrations, 101 (2002) 161
- Capetillo-Leal, C., see Sandoval-Castro, C.A., 101 (2002) 191
- Carabaño, R., see Xiccato, G., 104 (2003) 153
- Caredra, S., see Valente, M.E., 108 (2003) 181
- Carlson, D. and Poulsen, H.D., Phytate degradation in soaked and fermented liquid feed—effect of diet, time of soaking, heat treatment, phytase activity, pH and temperature, 103 (2003) 141
- Carneiro, D.J., see Vidotti, R.M., 105 (2003) 199
- Carpino, S., Licitra, G. and Van Soest, P.J., Selection of forage species by dairy cattle on complex Sicilian pasture, 105 (2003) 205
- Carter, M.P., see Mandebvu, P., 108 (2003) 25
- Carter, M.P., see Uchida, K., 107 (2003) 1
- Carulla, J.E., see Hess, H.D., 109 (2003) 79
- Castellani, G., see Piva, A., 106 (2003) 149
- Castrillo, C., see Fondevila, M., 101 (2002) 1
- Cavallarin, L., see Valente, M.E., 108 (2003) 181
- Centeno, C., see Brenes, A., 110 (2003) 201
- Cervera, C., see Villamide, M.J., 109 (2003) 195
- Cetina-Góngora, R., see Sandoval-Castro, C.A., 101 (2002) 191
- Chakaredza, S., see Ginting-Moenhe, U., 102 (2002) 217
- Chiou, P.W.-S., see Yu, B., 102 (2002) 35
- Choct, M., see Twomey, L.N., 108 (2003) 61
- Choct, M., see Twomey, L.N., 108 (2003) 71
- Choct, M., see Twomey, L.N., 108 (2003) 83
- Choi, C.W., Vanhatalo, A., Ahvenjärvi, S. and Huhtanen, P., Effects of several protein supplements on flow of soluble non-ammonia nitrogen from the forestomach and milk production in dairy cows, 102 (2002) 15
- Christensen, D.A., see Yu, P., 107 (2003) 45
- Çiftçi, İ., Yenice, E. and Eleroglu, H., Use of triticale alone and in combination with wheat or maize: effects of diet type and enzyme supplementation on hen performance, egg quality, organ weights, intestinal viscosity and digestive system characteristics, 105 (2003) 149
- Ciocca, M.L.S., see Kozloski, G.V., 104 (2003) 29
- Clark, J.H., see Ipharraguerre, I.R., 106 (2003) 39
- Classen, H.L., see Newkirk, R.W., 104 (2003) 111
- Coblentz, W.K., see Galdámez-Cabrera, N.W., 105 (2003) 185

Coblentz, W.K., see McBeth, L.J., 108 (2003) 147
 Coblentz, W.K., see Turner, J.E., 109 (2003) 47
 Cochran, R.C., see Klevesahl, E.A., 105 (2003) 5
 Coffey, K.P., see Galdámez-Cabrera, N.W., 105 (2003) 185
 Coffey, K.P., see McBeth, L.J., 108 (2003) 147
 Coffey, K.P., see Turner, J.E., 109 (2003) 47
 Colombatto, D., Mould, F.L., Bhat, M.K. and Owen, E., Use of fibrolytic enzymes to improve the nutritive value of ruminant diets. A biochemical and *in vitro* rumen degradation assessment, 107 (2003) 201
 Cone, J.W., see Becker, P.M., 110 (2003) 159
 Coors, J.G., see Schwab, E.C., 109 (2003) 1
 Cornu, A., see Broudicou, L.P., 105 (2003) 95
 Cousins, R.J., see Cao, J., 101 (2002) 161
 Cravener, T.L., see Roush, W.B., 102 (2002) 225
 Crovetto, G.M., see Getachew, G., 102 (2002) 169
 Cunha, L.F., see Freire, J.P.B., 106 (2003) 119
 Curnow, J., see Glencross, B., 107 (2003) 117
 Czajkowski, M., see Knaus, W.F., 102 (2002) 3

D

Dakowski, P., see Pastuszevska, B., 106 (2003) 175
 Dale, B.E., see Weimer, P.J., 103 (2003) 41
 Daniels, M.B., see Galdámez-Cabrera, N.W., 105 (2003) 185
 Danneels, M., see Fievez, V., 104 (2003) 41
 Davies, D.R., see Lee, M.R.F., 104 (2003) 59
 Davis, S.R., see Cao, J., 101 (2002) 161
 Díaz, T.E., see Hess, H.D., 109 (2003) 79
 De Boever, J.L., see Xiccato, G., 104 (2003) 153
 De Boever, J.L., Vanacker, J.M. and De Brabander, D.L., Rumen degradation characteristics of nutrients in maize silages and evaluation of laboratory measurements and NIRS as predictors, 101 (2002) 73
 De Boever, J.L., Vanacker, J.M. and De Brabander, D.L., Rumen degradation characteristics of nutrients in compound feeds and the evaluation of tables, laboratory methods and NIRS as predictors, 107 (2003) 29
 De Brabander, D.L., see De Boever, J.L., 101 (2002) 73
 De Brabander, D.L., see De Boever, J.L., 107 (2003) 29
 de Ondarza, M.B. and Sniffen, C.J., A new method to estimate microbial nitrogen escape from the rumen of the dairy cow, 101 (2002) 201

de Pablo, M., see Alomar, D., 107 (2003) 191
 De, D. and Singh, G.P., Effect of cold process monensin enriched urea molasses mineral blocks on performance of crossbred calves fed a wheat straw based diet, 103 (2003) 51
 Decuyper, J.A., see Dierick, N.A., 102 (2002) 53
 DeFrain, J.M., Shirley, J.E., Behnke, K.C., Titgemeyer, E.C. and Ethington, R.T., Development and evaluation of a pelleted feedstuff containing condensed corn steep liquor and raw soybean hulls for dairy cattle diets, 107 (2003) 75
 Demeyer, D., see Fievez, V., 104 (2003) 41
 DePeters, E.J., Getachew, G., Fadel, J.G., Zinn, R.A., Taylor, S.J., Pareas, J.W., Hinders, R.G. and Aseltine, M.S., *In vitro* gas production as a method to compare fermentation characteristics of steam-flaked corn, 105 (2003) 109
 Dhiman, T.R., Zaman, M.S., Gimenez, R.R., Walters, J.L. and Treacher, R., Performance of dairy cows fed forage treated with fibrolytic enzymes prior to feeding, 101 (2002) 115
 Dias, R.I.M., see Freire, J.P.B., 106 (2003) 119
 Dierick, N.A. and Decuyper, J.A., Endogenous lipolysis in feedstuffs and compound feeds for pigs: effects of storage time and conditions and lipase and/or emulsifier addition, 102 (2002) 53
 Dixon, R.M., Hosking, B.J. and Egan, A.R., Effects of oilseed meal and grain-urea supplements fed infrequently on digestion in sheep. 1. Low quality grass hay diets, 110 (2003) 75
 Dixon, R.M., Karda, W., Hosking, B.J. and Egan, A.R., Effects of oilseed meals and grain-urea supplements fed infrequently on digestion in sheep. 2. Cereal straw diets, 110 (2003) 95
 Djouvinov, D.S., see Webster, A.J.F., 105 (2003) 123
 Dohme, F., see Fievez, V., 104 (2003) 41
 Dorton, K.L., Engle, T.E., Hamar, D.W., Siciliano, P.D. and Yemm, R.S., Effects of copper source and concentration on copper status and immune function in growing and finishing steers, 110 (2003) 31
 Drochner, W., see Zacharias, B., 106 (2003) 139
 Drochner, W., see Zimmermann, B., 104 (2003) 143
 Drouillard, J.S., see Trater, A.M., 107 (2003) 173
 Dryden, G. McL., see Granzin, B.C., 103 (2003) 113
 Dündar, Y., see Eryavuz, A., 109 (2003) 35
 Dung, N.N.X., Manh, L.H. and Udén, P., Tropical fibre sources for pigs—digestibility, digesta retention and estimation of fibre digestibility *in vitro*, 102 (2002) 109
 Dutta, N., see Patra, A.K., 109 (2003) 171

E

- Echeverría, V., Belmar, R., Ly, J. and Santos-Ricalde, R.H., Effect of *Leucaena leucocephala* leaf meal treated with acetic acid or sodium hydroxide on apparent digestibility and nitrogen retention in pig diets, 101 (2002) 151
- Edney, M.J., see Newkirk, R.W., 104 (2003) 111
- Egan, A.R., see Dixon, R.M., 110 (2003) 75
- Egan, A.R., see Dixon, R.M., 110 (2003) 95
- Ekelund, A., Spörndly, R., Valk, H. and Murphy, M., Influence of feeding various phosphorus sources on apparent digestibility of phosphorus in dairy cows, 109 (2003) 95
- Eleroglu, H., see Çiftçi, İ., 105 (2003) 149
- Elgersma, A., Ellen, G., van der Horst, H., Muuse, B.G., Boer, H. and Tamminga, S., Comparison of the fatty acid composition of fresh and ensiled perennial ryegrass (*Lolium perenne* L.), affected by cultivar and regrowth interval, 108 (2003) 191
- Ellen, G., see Elgersma, A., 108 (2003) 191
- Elwinger, K., see Waldenstedt, L., 108 (2003) 119
- Engle, T.E., see Dorton, K.L., 110 (2003) 31
- Enting, H., see Weurding, R.E., 110 (2003) 175
- Erener, G., Ocak, N., Ozturk, E. and Ozdas, A., Effect of different choice feeding methods based on whole wheat on performance of male broiler chickens, 106 (2003) 131
- Eryavuz, A., Dündar, Y., Ozdemir, M., Aslan, R. and Tekerli, M., Effects of urea and sulfur on performance of faunate and defaunate Ramlic lambs, and some rumen and blood parameters, 109 (2003) 35
- Ethington, R.T., see DeFrain, J.M., 107 (2003) 75
- Everts, H., see Lee, K.-W., 106 (2003) 219
- Everts, H., see Šebek, L.B.J., 101 (2002) 17

F

- Fadel, J.G., see DePeters, E.J., 105 (2003) 109
- Falcao-E-Cunha, L., see Xiccato, G., 104 (2003) 153
- Farmer, C.G., see Klevesahl, E.A., 105 (2003) 5
- Farran, M.T., Barbour, E.K. and Ashkarian, V.M., Effect of excess leucine in low protein diet on ketosis in 3-week-old male broiler chicks fed different levels of isoleucine and valine, 103 (2003) 171

- Fasone, V., see Priolo, A., 108 (2003) 215
- Feldmann, J., see Hansen, H.R., 105 (2003) 21
- Fenlon, D.R., see Blake, D.P., 103 (2003) 123
- Fievez, V., Dohme, F., Danneels, M., Raes, K. and Demeyer, D., Fish oils as potent rumen methane inhibitors and associated effects on rumen fermentation in vitro and in vivo, 104 (2003) 41
- Filacorda, S., see Haddi, M.-L., 104 (2003) 215
- Filya, I., Nutritive value of whole crop wheat silage harvested at three stages of maturity, 103 (2003) 85
- Flachowsky, G., see Matthé, A., 103 (2003) 15
- Fondevila, M., BarriosUrdaneta, A., Balcells, J. and Castrillo, C., Gas production from straw incubated in vitro with different levels of purified carbohydrates, 101 (2002) 1
- Fondevila, M., Morales, J., Pérez, J.F., Barrios-urdaneta, A. and Baucells, M.D., Microbial caecal fermentation in Iberic or Landrace pigs given acorn/sorghum or maize diets estimated in vitro using the gas production technique, 102 (2002) 93
- Fondevila, M., see Getachew, G., 102 (2002) 169
- Fontainhas-Fernandes, A., see Pereira, O., 101 (2002) 171
- Fox, D.G., see Knaus, W.F., 102 (2002) 3
- Francesco, M., see Rossi, F., 108 (2003) 223
- Freire, J.P.B., Dias, R.I.M., Cunha, L.F. and Aumaitre, A., The effect of genotype and dietary fibre level on the caecal bacterial enzyme activity of young piglets: digestive consequences, 106 (2003) 119
- Frutos, P., see Hervás, G., 109 (2003) 65
- Fuchslöcher, R., see Alomar, D., 107 (2003) 191
- Fujihara, T., see Shem, M.N., 108 (2003) 15

G

- Galdámez-Cabrera, N.W., Coffey, K.P., Coblenz, W.K., Turner, J.E., Scarbrough, D.A., Johnson, Z.B., Gunsaulis, J.L., Daniels, M.B. and Hellwig, D.H., In situ ruminal degradation of dry matter and fiber from bermudagrass fertilized with different nitrogen rates and harvested on two dates, 105 (2003) 185
- Galofaro, V., see Priolo, A., 108 (2003) 215
- Gannon, V.P.J., see Bach, S.J., 104 (2003) 179
- García, J., see Villamide, M.J., 109 (2003) 195
- Getachew, G., Crovetto, G.M., Fondevila, M., Krishnamoorthy, U., Singh, B., Spanghero, M.,

Steingass, H., Robinson, P.H. and Kailas, M.M., Laboratory variation of 24 h in vitro gas production and estimated metabolizable energy values of ruminant feeds, 102 (2002) 169

Getachew, G., see DePeters, E.J., 105 (2003) 109

Gianfranco, P., see Rossi, F., 108 (2003) 223

Gidenne, T., see Xiccato, G., 104 (2003) 153

Gimenez, R.R., see Dhiman, T.R., 101 (2002) 115

Ginting-Moenche, U., Chakeredza, S. and ter Meulen, U., The influence of fermented putak on diet digestibility and growth performance of weanling pigs, 102 (2002) 217

Giovanna, C., see Rossi, F., 108 (2003) 223

Giri, S.S., Sahoo, S.K., Sahu, A.K. and Meher, P.K., Effect of dietary protein level on growth, survival, feed utilisation and body composition of hybrid *Clarias* catfish (*Clarias batrachus* × *Clarias gariepinus*), 104 (2003) 169

Givens, D.I., see Rymer, C., 101 (2002) 31

Glen, E.F., see Webster, A.J.F., 105 (2003) 123

Glencross, B., Curnow, J. and Hawkins, W., Evaluation of the variability in chemical composition and digestibility of different lupin (*Lupinus angustifolius*) kernel meals when fed to rainbow trout (*Oncorhynchus mykiss*), 107 (2003) 117

Gong, L.M., see Wang, J.F., 104 (2003) 95

González, E., see Steinfeldt, S., 110 (2003) 185

Goonewardene, L.A., see Zuidhof, M.J., 105 (2003) 225

Goulas, C., Zervas, G. and Papadopoulos, G., Effect of dietary animal fat and methionine on dairy ewes milk yield and milk composition, 105 (2003) 43

Gracco, L., see Spanghero, M., 104 (2003) 201

Grande, D., see Nahed, J., 106 (2003) 209

Grazin, B.C. and Dryden, G. McL., Effects of alkalis, oxidants and urea on the nutritive value of rhodes grass (*Chloris gayana* cv. Callide), 103 (2003) 113

Grenet, E., see Broudiscou, L.P., 105 (2003) 95

Gruber, L., see Spanghero, M., 104 (2003) 201

Gu, X. and Li, D., Fat nutrition and metabolism in piglets: a review, 109 (2003) 151

Gunter, W., see Boros, D., 101 (2002) 135

Gullord, M., see Svihus, B., 102 (2002) 71

Gunsaulis, J.L., see Galdámez-Cabrera, N.W., 105 (2003) 185

Guo, Y., Zhang, G., Yuan, J. and Nie, W., Effects of source and level of magnesium and Vitamin E on prevention of hepatic peroxidation and oxidative deterioration of broiler meat, 107 (2003) 143

H

Haddi, M.-L., Filacorda, S., Meniai, K., Rollin, F. and Susmel, P., In vitro fermentation kinetics of some halophyte shrubs sampled at three stages of maturity, 104 (2003) 215

Halachmi, I., see Miron, J., 106 (2003) 20

Hall, G., see Köse, S., 107 (2003) 161

Hamar, D.W., see Dorton, K.L., 110 (2003) 31

Hampson, D.J., see Montagne, L., 108 (2003) 95

Hampson, D.J., see Pluske, J.R., 107 (2003) 129

Hansen, H.R., Hector, B.L. and Feldmann, J., A qualitative and quantitative evaluation of the seaweed diet of North Ronaldsay sheep, 105 (2003) 21

Hansson, I., see Waldenstedt, L., 108 (2003) 119

Harmon, D.L., see Yamka, R.M., 109 (2003) 121

Harstad, O.M., see Ljøkjel, K., 107 (2003) 87

Harstad, O.M., see Ljøkjel, K., 107 (2003) 105

Hawkins, W., see Glencross, B., 107 (2003) 117

Hector, B.L., see Hansen, H.R., 105 (2003) 21

Hellämäki, M., see Nousiainen, J., 103 (2003) 97

Hellämäki, M., see Nousiainen, J., 110 (2003) 61

Hellwig, D.H., see Galdámez-Cabrera, N.W., 105 (2003) 185

Hellwig, D.H., see McBeth, L.J., 108 (2003) 147

Henry, P.R., see Cao, J., 101 (2002) 161

Herbein, J.H., see Loor, J.J., 103 (2003) 63

Herbein, J.H., see Loor, J.J., 109 (2003) 105

Herstad, O., see Skrede, G., 105 (2003) 135

Hervás, G., Frutos, P., Javier Giráldez, F., Mantecón, Á.R. and Álvarez Del Pino, M.C., Effect of different doses of quebracho tannins extract on rumen fermentation in ewes, 109 (2003) 65

Hess, H.D., Kreuzer, M., Díaz, T.E., Lascano, C.E., Carulla, J.E., Soliva, C.R. and Machmüller, A., Saponin rich tropical fruits affect fermentation and methanogenesis in faunated and defaunated rumen fluid, 109 (2003) 79

Hill, J. and Leaver, J.D., Changes in chemical composition and nutritive value of urea treated whole crop wheat during exposure to air, 102 (2002) 181

Hillman, K., see Blake, D.P., 103 (2003) 123

Hinders, R.G., see DePeters, E.J., 105 (2003) 109

Hodgkinson, S.M. and Moughan, P.J., The enzyme hydrolysed protein method for the determination of endogenous ileal nitrogen and amino acid flows—a modification, 108 (2003) 207

Hoffmann, E.M., Muetzel, S. and Becker, K., The fermentation of soybean meal by rumen microbes in vitro reveals different kinetic features

- for the inactivation and the degradation of trypsin inhibitor protein, 106 (2003) 189
- Holck, A., see Skrede, G., 105 (2003) 135
- Holley, R.A., see Bach, S.J., 104 (2003) 179
- Homolka, P., see Trínáctý, J., 106 (2003) 59
- Hosking, B.J., see Dixon, R.M., 110 (2003) 75
- Hosking, B.J., see Dixon, R.M., 110 (2003) 95
- Hric, I., see Matthé, A., 103 (2003) 15
- Hristov, A.N., Ivan, M., Neill, L. and McAllister, T.A., Evaluation of several potential bioactive agents for reducing protozoal activity in vitro, 105 (2003) 163
- Huhtanen, P., see Choi, C.W., 102 (2002) 15
- Huhtanen, P., see Nousiainen, J., 103 (2003) 97
- Huhtanen, P., see Nousiainen, J., 110 (2003) 61
- Humphreys, M.O., see Lee, M.R.F., 104 (2003) 59
- Hvelplund, T., see Mlay, P.S., 109 (2003) 19
- Hvelplund, T., see Toth, R., 104 (2003) 71

I

- Ichinohe, T., see Shem, M.N., 108 (2003) 15
- Ikhata, U.J., see Bamikole, M.A., 105 (2003) 71
- Inbarr, J., see Waldenstedt, L., 108 (2003) 119
- Ipharraguerre, I.R. and Clark, J.H., Usefulness of ionophores for lactating dairy cows: a review, 106 (2003) 39
- Ivan, M., see Hristov, A.N., 105 (2003) 163

J

- Jablecki, G., see Pastuszewska, B., 106 (2003) 175
- Jakobsen, K., see Wang, J.F., 104 (2003) 95
- Jakobsen, M., see Mikkelsen, L.L., 109 (2003) 133
- Janardhana Reddy, T., see Ramana Reddy, Y., 106 (2003) 29
- Jamikor, U., see Yamka, R.M., 109 (2003) 121
- Javier Giráldez, F., see Hervás, G., 109 (2003) 65
- Jelan, Z.A., see Pimpa, O., 104 (2003) 191
- Jensen, B.B., see Mikkelsen, L.L., 109 (2003) 133
- Jensen, B.B., see Wang, J.F., 102 (2002) 125
- Jensen, B.B., see Wang, J.F., 104 (2003) 95
- Johnson, D.E., see Klevesahl, E.A., 105 (2003) 5
- Johnson, E.H., see Kadim, I.T., 109 (2003) 209
- Johnson, Z.B., see Galdámez-Cabrera, N.W., 105 (2003) 185
- Johnson, Z.B., see Turner, J.E., 109 (2003) 47
- Jongbloed, A.W., see Becker, P.M., 110 (2003) 159

- Jovanovic, N.J., see Volkers, K.C., 109 (2003) 183
- Jørgensen, H., see Wang, J.F., 102 (2002) 125
- Jung, H.-J.G. and Lamb, J.F.S., Identification of lucerne stem cell wall traits related to in vitro neutral detergent fibre digestibility, 110 (2003) 17

K

- Kadim, I.T., Johnson, E.H., Mahgoub, O., Srikanthakumar, A., Al-Ajmi, D., Ritchie, A., Annamalai, K. and Al-Halali, A.S., Effect of low levels of dietary cobalt on apparent nutrient digestibility in Omani goats, 109 (2003) 209
- Kailas, M.M., see Getachew, G., 102 (2002) 169
- Kalač, P., see Steidlová, Š., 102 (2002) 197
- Kappert, H.J., see Lee, K.-W., 106 (2003) 219
- Karda, W., see Dixon, R.M., 110 (2003) 95
- Karim, S.A., see Santra, A., 101 (2002) 87
- Kawai, M., see Yahaya, M.S., 101 (2002) 127
- Kaya, S., see Webster, A.J.F., 105 (2003) 123
- Kellogg, D.W., see Turner, J.E., 109 (2003) 47
- Khan, B.A., see Zuidhof, M.J., 105 (2003) 225
- Kilpatrick, D.J., see Park, R.S., 102 (2002) 151
- Kitcherside, M.A., see Webster, A.J.F., 105 (2003) 123
- Kitessa, S.M., Peake, D., Bencini, R. and Williams, A.J., Fish oil metabolism in ruminants. III. Transfer of *n*-3 polyunsaturated fatty acids (PUFA) from tuna oil into sheep's milk, 108 (2003) 1
- Klasing, K.C., see Ribeiro, A.M.L., 103 (2003) 155
- Klevesahl, E.A., Cochran, R.C., Tütemeyer, E.C., Wickersham, T.A., Farmer, C.G., Arroquy, J.I. and Johnson, D.E., Effect of a wide range in the ratio of supplemental rumen degradable protein to starch on utilization of low-quality, grass hay by beef steers, 105 (2003) 5
- Knaus, W.F., Beermann, D.H., Tedeschi, L.O., Czajkowski, M., Fox, D.G. and Russell, J.B., Effects of urea, isolated soybean protein and blood meal on growing steers fed a corn-based diet, 102 (2002) 3
- Knox, A., see Wilkinson, J.M., 105 (2003) 215
- Kobayashi, Y., see Pan, J., 104 (2003) 13
- Kobayashi, Y., see Pan, J., 106 (2003) 69
- Kobayashi, Y., see Selim, A.S.M., 102 (2002) 207
- Koike, S., see Pan, J., 104 (2003) 13
- Koike, S., see Pan, J., 106 (2003) 69
- Köse, S., Quantick, P. and Hall, G., Changes in the levels of histamine during processing and storage of fish meal, 107 (2003) 161

Kozloski, G.V., Perottoni, J., Ciocca, M.L.S., Rocha, J.B.T., Raiser, A.G. and Sanchez, L.M.B., Potential nutritional assessment of dwarf elephant grass (*Pennisetum purpureum* Schum. cv. Mott) by chemical composition, digestion and net portal flux of oxygen in cattle, 104 (2003) 29

Kreuzer, M., see Hess, H.D., 109 (2003) 79

Kreuzer, M., see Śliwiński, B.J., 101 (2002) 101

Krishna, N., see Ramana Reddy, Y., 106 (2003) 29

Krishnamoorthy, U., see Getachew, G., 102 (2002) 169

L

Laborde, H.E., see Arelovich, H.M., 105 (2003) 29

Lamb, J.F.S., see Jung, H.-J.G., 110 (2003) 17

Lantzech, H.-J., see Zimmermann, B., 104 (2003) 143

Lanza, M., see Priolo, A., 108 (2003) 215

Lascano, C.E., see Hess, H.D., 109 (2003) 79

Lauer, J.G., see Schwab, E.C., 109 (2003) 1

Le Guen, M.P., see Rémond, D., 105 (2003) 55

Leaver, J.D., see Hill, J., 102 (2002) 181

Lebzien, P., see Matthé, A., 103 (2003) 15

Lee, K.-W., Everts, H., Lankhorst, -ionone to the diet fails to affect growth performance in female broiler chickens, 106 (2003) 219

Lee, M.R.F., Merry, R.J., Davies, D.R., Moorby, J.M., Humphreys, M.O., Theodorou, M.K., MacRae, J.C. and Scollan, N.D., Effect of increasing availability of water-soluble carbohydrates on *in vitro* rumen fermentation, 104 (2003) 59

Leeson, S., see Ajakaiye, A., 104 (2003) 209

Le Guen, M.P., see Rémond, D., 105 (2003) 55

Li, D., see Gu, X., 109 (2003) 151

Li, D.F., see Wang, J.F., 102 (2002) 125

Li, D.F., see Wang, J.F., 104 (2003) 95

Liang, J.B., see Pimpa, O., 104 (2003) 191

Licitra, G., see Carpino, S., 105 (2003) 205

Lin, X., see Loo, J.J., 109 (2003) 105

Lindberg, J.E., Arvidsson, A. and Wang, J., Influence of naked barley cultivar with normal, amylose-rich or amylopectin-rich starch and enzyme supplementation on digestibility and piglet performance, 104 (2003) 121

Lindberg, J.E., see Wang, J.F., 102 (2002) 125

Littell, R.C., see Cao, J., 101 (2002) 161

Ljøkel, K., Harstad, O.M., Prestløkken, E. and Skrede, A., *In situ* digestibility of protein in

barley grain (*Hordeum vulgare*) and peas (*Pisum sativum* L.) in dairy cows: influence of heat treatment and glucose addition, 107 (2003) 87

Ljøkel, K., Harstad, O.M., Prestløkken, E. and Skrede, A., *In situ* digestibility of starch in barley grain (*Hordeum vulgare*) and peas (*Pisum sativum* L.) in dairy cows: influence of heat treatment and glucose addition, 107 (2003) 105

Loges, R., see Volkers, K.C., 109 (2003) 183

Loo, J.J. and Herbein, J.H., Dietary canola or soybean oil with two levels of conjugated linoleic acids (CLA) alter profiles of 18:1 and 18:2 isomers in blood plasma and milk fat from dairy cows, 103 (2003) 63

Loo, J.J., Soriano, F.D., Lin, X., Herbein, J.H. and Polan, C.E., Grazing allowance after the morning or afternoon milking for lactating cows fed a total mixed ration (TMR) enhances *trans*11-18:1 and *cis*9,*trans*11-18:2 (rumenic acid) in milk fat to different extents, 109 (2003) 105

Lopez-Villalobos, N., see Moore, K.M., 104 (2003) 1

Luaga, M., see Shem, M.N., 108 (2003) 15

Lund, P., see Toth, R., 104 (2003) 71

Ly, J., see Echeverría, V., 101 (2002) 151

M

Machmüller, A., see Hess, H.D., 109 (2003) 79

Machmüller, A., see Śliwiński, B.J., 101 (2002) 101

Mackie, R.L., see Smith, A.H., 106 (2003) 165

MacRae, J.C., see Lee, M.R.F., 104 (2003) 59

Madsen, J., see Mlay, P.S., 109 (2003) 19

Maertens, L., see Villamide, M.J., 109 (2003) 195

Maertens, L., see Xiccato, G., 104 (2003) 153

Mahgoub, O., see Kadim, I.T., 109 (2003) 209

Maltz, E., see Miron, J., 106 (2003) 20

Mandebvu, P., see Uchida, K., 107 (2003) 1

Mandebvu, P., Ballard, C.S., Sniffen, C.J., Carter, M.P., Wolford, H.M., Sato, T., Yabuuchi, Y., Block, E. and Palmquist, D.L., Effect of feeding calcium salts of long-chain fatty acids, from palm fatty acid distillate or soybean oil, to high producing dairy cows on milk yield and composition, and on selected blood and reproductive parameters, 108 (2003) 25

Manh, L.H., see Dung, N.N.X., 102 (2002) 109

Mantecón, Á.R., see Hervás, G., 109 (2003) 65

Marquardt, R.R., see Boros, D., 101 (2002) 135

Martín, García A.I. see Molina Alcaide, E., 110 (2003) 3

- Martín García, A.I., Moumen, A., Yáñez Ruiz, D.R. and Molina Alcaide, E., Chemical composition and nutrients availability for goats and sheep of two-stage olive cake and olive leaves, 107 (2003) 61
- Matsui, T., see Park, W.-Y., 101 (2002) 55
- Matsuoka, S., see Yahaya, M.S., 101 (2002) 127
- Matthé, A., Lebzien, P., Hric, I. and Flachowsky, G., Influence of prolonged adaptation periods on starch degradation in the digestive tract of dairy cows, 103 (2003) 15
- Matyjek, R., see Pastuszewska, B., 106 (2003) 175
- Maurizio, M., see Rossi, F., 108 (2003) 223
- McAllister, T.A., see Bach, S.J., 104 (2003) 179
- McAllister, T.A., see Hristov, A.N., 105 (2003) 163
- McBeth, L.J., Coffey, K.P., Coblenz, W.K., Hellwig, D.H., Turner, J.E. and Scarbrough, D.A., Impact of level of spontaneous heating during storage of bermudagrass hay on rumen in situ disappearance kinetics in steers, 108 (2003) 147
- McConnell, M.F., see Twomey, L.N., 108 (2003) 71
- McCracken, K.J., see Wilkinson, J.M., 105 (2003) 215
- McKinnon, J.J., see Yu, P., 107 (2003) 45
- McNab, J., see Wilkinson, J.M., 105 (2003) 215
- McNabb, W.C., see Min, B.R., 106 (2003) 3
- McSweeney, C.S., see Smith, A.H., 106 (2003) 165
- Meher, P.K., see Giri, S.S., 104 (2003) 169
- Meier, J.A., see Yu, P., 107 (2003) 45
- Melaku, S., Peters, K.J. and Tegegne, A., In vitro and in situ evaluation of selected multipurpose trees, wheat bran and *Lablab purpureus* as potential feed supplements to tef (*Eragrostis tef*) straw, 108 (2003) 159
- Mendoza, G., see Nahed, J., 106 (2003) 209
- Meniai, K., see Haddi, M.-L., 104 (2003) 215
- Meola, E., see Piva, A., 106 (2003) 149
- Merry, R.J., see Lee, M.R.F., 104 (2003) 59
- Mertens, D.R., see Weimer, P.J., 103 (2003) 41
- Meschy, F., see Bravo, D., 108 (2003) 43
- Mikkelsen, L.L., Jakobsen, M. and Jensen, B.B., Effects of dietary oligosaccharides on microbial diversity and fructo-oligosaccharide degrading bacteria in faeces of piglets post-weaning, 109 (2003) 133
- Miles, R.D., see Cao, J., 101 (2002) 161
- Miller, H.M., see Wilkinson, J.M., 105 (2003) 215
- Min, B.R., Barry, T.N., Attwood, G.T. and McNabb, W.C., The effect of condensed tannins on the nutrition and health of ruminants fed fresh temperate forages: a review, 106 (2003) 3
- Mir, Z., see Zaman, M.S., 103 (2003) 163
- Mireles, A.J., see Ribeiro, A.M.L., 103 (2003) 155
- Mirkena, T., see Tolla, N., 103 (2003) 29
- Miron, J., Yosef, E., Maltz, E. and Halachmi, I., Soybean hulls as a replacement of forage neutral detergent fiber in total mixed rations of lactating cows, 106 (2003) 21
- Miyoshi, S., see Mandevu, P., 105 (2003) 81
- Mlay, P.S., Pereka, A.E., Weisbjerg, M.R., Hvelplund, T. and Madsen, J., Digestion and passage kinetics of fibre in mature dairy heifers maintained on poor quality hay as affected by the source and level of nitrogen supplementation, 109 (2003) 19
- Molina Alcaide, E., Yáñez Ruiz, D.R., Moumen, A. and Martín García, A.I., Ruminal degradability and in vitro intestinal digestibility of sunflower meal and in vitro digestibility of olive by-products supplemented with urea or sunflower meal. Comparison between goats and sheep, 110 (2003) 3
- Molina Alcaide, E., see Martín García, A.I., 107 (2003) 61
- Molnar, C.L., see Zuidhof, M.J., 105 (2003) 225
- Moloney, A.P., see Woods, V.B., 110 (2003) 111
- Moloney, A.P., see Woods, V.B., 110 (2003) 131
- Moloney, A.P., see Woods, V.B., 110 (2003) 145
- Montagne, L., Pluske, J.R. and Hampson, D.J., A review of interactions between dietary fibre and the intestinal mucosa, and their consequences on digestive health in young non-ruminant animals, 108 (2003) 95
- Moorthy, J.M., see Lee, M.R.F., 104 (2003) 59
- Moore, K.M., Barry, T.N., Cameron, P.N., Lopez-Villalobos, N. and Cameron, D.J., Willow (*Salix* sp.) as a supplement for grazing cattle under drought conditions, 104 (2003) 1
- Morales, J., see Fondevila, M., 102 (2002) 93
- Mordenti, A., see Piva, A., 106 (2003) 149
- Mordenti, A.L., see Piva, A., 106 (2003) 149
- Morley, F.M., see Zuidhof, M.J., 105 (2003) 225
- Mosenthin, R., see Zimmermann, B., 104 (2003) 143
- Moughan, P.J., see Hodgkinson, S.M., 108 (2003) 207
- Mould, F.L., see Colombatto, D., 107 (2003) 201
- Moumen, A., see Martín García, A.I., 107 (2003) 61
- Moumen, A., see Molina Alcaide, E., 110 (2003) 3
- Moyer, J.R., see Zaman, M.S., 103 (2003) 163
- Mtengeti, E.J., see Shem, M.N., 108 (2003) 15
- Muetzel, S., see Hoffmann, E.M., 106 (2003) 189
- Mullan, B.P., see Pluske, J.R., 107 (2003) 129
- Murphy, M., see Ekelund, A., 109 (2003) 95
- Muuse, B.G., see Elgersma, A., 108 (2003) 191

N

- Nagalakshmi, D., Sastry, V.R.B. and Pawde, A., Rumen fermentation patterns and nutrient digestion in lambs fed cottonseed meal supplemental diets, 103 (2003) 1
- Nahed, J., Solís, C., Grande, D., Sanginés, L., Mendoza, G. and Pérez-Gil, F., Evaluation of the use of *Buddleia skutchii* tree leaves and Kikuyu (*Pennisetum clandestinum*) grass hay in sheep feeding, 106 (2003) 209
- Nefzaoui, A., see Ben Salem, H., 110 (2003) 45
- Neill, L., see Hristov, A.N., 105 (2003) 163
- Newkirk, R.W., Classen, H.L. and Edney, M.J., Effects of prepress-solvent extraction on the nutritional value of canola meal for broiler chickens, 104 (2003) 111
- Nie, W., see Guo, Y., 107 (2003) 143
- Nousiainen, J., Rinne, M., Hellämäki, M. and Huhtanen, P., Prediction of the digestibility of the primary growth of grass silages harvested at different stages of maturity from chemical composition and pepsin-cellulase solubility, 103 (2003) 97
- Nousiainen, J., Rinne, M., Hellämäki, M. and Huhtanen, P., Prediction of the digestibility of primary growth and regrowth grass silages from chemical composition, pepsin-cellulase solubility and indigestible cell wall content, 110 (2003) 61

O

- Ocak, N., see Erener, G., 106 (2003) 131
- Ochtabińska, A., see Pastuszewska, B., 106 (2003) 175
- Odenyo, A.A., see Smith, A.H., 106 (2003) 165
- Offner, A., Bach, A. and Sauvant, D., Quantitative review of in situ starch degradation in the rumen, 106 (2003) 81
- Okubo, M., see Pan, J., 104 (2003) 13
- Okubo, M., see Pan, J., 106 (2003) 69
- O'Mara, F.P., see Woods, V.B., 110 (2003) 111
- O'Mara, F.P., see Woods, V.B., 110 (2003) 131
- O'Mara, F.P., see Woods, V.B., 110 (2003) 145
- Ott, H., see Zacharias, B., 106 (2003) 139
- Owen, E., see Colombatto, D., 107 (2003) 201
- Ozdas, A., see Erener, G., 106 (2003) 131
- Ozdemir, M., see Eryavuz, A., 109 (2003) 35
- Ozturk, E., see Erener, G., 106 (2003) 131

P

- Palmquist, D.L., see Mandebvu, P., 108 (2003) 25
- Pan, J., Koike, S., Suzuki, T., Ueda, K., Kobayashi, Y., Tanaka, K. and Okubo, M., Effect of mastication on degradation of orchardgrass hay stem by rumen microbes: fibrolytic enzyme activities and microbial attachment, 106 (2003) 69
- Pan, J., see Selim, A.S.M., 102 (2002) 207
- Pan, J., Suzuki, T., Koike, S., Ueda, K., Kobayashi, Y., Tanaka, K. and Okubo, M., Effects of urea infused into the rumen on liquid- and particle-associated fibrolytic enzyme activities in steers fed low quality grass hay, 104 (2003) 13
- Panda, A.K., see Rama Rao, S.V., 106 (2003) 199
- Paolo Gatta, P., see Piva, A., 106 (2003) 149
- Papadopoulos, G., see Goulas, C., 105 (2003) 43
- Papon, Y., see Broudiscou, L.-P., 101 (2002) 183
- Papon, Y., see Broudiscou, L.-P., 105 (2003) 95
- Pareas, J.W., see DePeters, E.J., 105 (2003) 109
- Park, R.S., Agnew, R.E. and Kilpatrick, D.J., The effect of freezing and thawing on grass silage quality predictions based on near infrared reflectance spectroscopy, 102 (2002) 151
- Park, W.-Y., Matsui, T. and Yano, H., Post-ruminal phytate degradation in sheep, 101 (2002) 55
- Pascual, J.J., see Xiccato, G., 104 (2003) 153
- Pastuszewska, B., Jablecki, G., Buraczewska, L., Dakowski, P., Taciak, M., Matyjek, R. and Ochtabińska, A., The protein value of differently processed rapeseed solvent meal and cake assessed by in vitro methods and in tests with rats, 106 (2003) 175
- Patra, A.K., Sharma, K., Dutta, N. and Pattanaik, A.K., Response of gravid does to partial replacement of dietary protein by a leaf meal mixture of *Leucaena leucocephala*, *Morus alba* and *Azadirachta indica*, 109 (2003) 171
- Pattanaik, A.K., see Patra, A.K., 109 (2003) 171
- Pavan, E. and Santini, F.J., Use of sunflower meal or fish meal as protein supplement for high quality fresh forage diets: ruminal fermentation, microbial protein synthesis and sites of digestion, 101 (2002) 61
- Pawde, A., see Nagalakshmi, D., 103 (2003) 1
- Peake, D., see Kitessa, S.M., 108 (2003) 1
- Pell, A.N., see Cannas, A., 106 (2003) 95
- Pereira, O., Rosa, E., Pires, M.A. and Fontainhas-Fernandes, A., Brassica by-products in diets of rainbow trout (*Oncorhynchus mykiss*) and their effects on performance, body composition, thyroid status and liver histology, 101 (2002) 171

- Pereka, A.E., see Mlay, P.S., 109 (2003) 19
 Pérez, J.F., see Fondevila, M., 102 (2002) 93
 Perez, J.M., see Villamide, M.J., 109 (2003) 195
 Perez, J.M., see Xiccato, G., 104 (2003) 153
 Pérez-Gil, F., see Nahed, J., 106 (2003) 209
 Perottoni, J., see Kozloski, G.V., 104 (2003) 29
 Peters, K.J., see Melaku, S., 108 (2003) 159
 Pethick, D.W., see Pluske, J.R., 107 (2003) 129
 Pethick, D.W., see Twomey, L.N., 108 (2003) 61
 Pethick, D.W., see Twomey, L.N., 108 (2003) 71
 Pethick, D.W., see Twomey, L.N., 108 (2003) 83
 Pike, J.N., see Trater, A.M., 107 (2003) 173
 Pimpa, O., Liang, J.B., Balcells, J., Jelani, Z.A. and Abdullah, N., Urinary purine derivative excretion in swamp buffaloes after duodenal purine base infusion, 104 (2003) 191
 Pires, M.A., see Pereira, O., 101 (2002) 171
 Piva, A., Meola, E., Paolo Gatta, P., Biagi, G., Castellani, G., Mordenti, A.L., Bernard Luchansky, J., Silva, S. and Mordenti, A., The effect of dietary supplementation with trivalent chromium on production performance of laying hens and the chromium content in the yolk, 106 (2003) 149
 Pizarro, M., see Brenes, A., 110 (2003) 201
 Pluske, J.R., Black, B., Pethick, D.W., Mullan, B.P. and Hampson, D.J., Effects of different sources and levels of dietary fibre in diets on performance, digesta characteristics and antibiotic treatment of pigs after weaning, 107 (2003) 129
 Pluske, J.R., see Montagne, L., 108 (2003) 95
 Pluske, J.R., see Twomey, L.N., 108 (2003) 61
 Pluske, J.R., see Twomey, L.N., 108 (2003) 71
 Pluske, J.R., see Twomey, L.N., 108 (2003) 83
 Polan, C.E., see Looor, J.J., 109 (2003) 105
 Poncet, C., see Rémond, D., 105 (2003) 55
 Ponnampalam, E., see Weimer, P.J., 103 (2003) 41
 Poulsen, H.D., see Carlson, D., 103 (2003) 141
 Praharaj, N.K., see Rama Rao, S.V., 106 (2003) 199
 Prestløkken, E., see Ljøkjel, K., 107 (2003) 87
 Prestløkken, E., see Ljøkjel, K., 107 (2003) 105
 Priolo, A., Lanza, M., Galofaro, V., Fasone, V. and Bella, M., Partially or totally replacing soybean meal and maize by chickpeas in lamb diets: intramuscular fatty acid composition, 108 (2003) 215

Q

- Quantick, P., see Köse, S., 107 (2003) 161

R

- Raes, K., see Fievez, V., 104 (2003) 41
 Raghava Rao, E., see Ramana Reddy, Y., 106 (2003) 29
 Raiser, A.G., see Kozloski, G.V., 104 (2003) 29
 Raju, M.V.L.N., see Rama Rao, S.V., 106 (2003) 199
 Rama Rao, S.V., Panda, A.K., Raju, M.V.L.N., Shyam Sunder, G. and Praharaj, N.K., Requirement of calcium for commercial broilers and white leghorn layers at low dietary phosphorus levels, 106 (2003) 199
 Ramana Reddy, Y., Krishna, N., Raghava Rao, E. and Janardhana Reddy, T., Influence of dietary protected lipids on intake and digestibility of straw based diets in Deccani sheep, 106 (2003) 29
 Ramirez-Avilés, L., see Sandoval-Castro, C.A., 101 (2002) 191
 Rémond, D., Le Guen, M.P. and Poncet, C., Degradation in the rumen and nutritional value of lupin (*Lupinus albus* L.) seed proteins effect of extrusion, 105 (2003) 55
 Rhein, R.T., see Turner, J.E., 109 (2003) 47
 Ribeiro, A.M.L., Mireles, A.J. and Klasing, K.C., Interactions between dietary phosphorus level, phytase supplementation and pelleting on performance and bone parameters of broilers fed high levels of rice bran, 103 (2003) 155
 Richter, M., see Trínáctý, J., 106 (2003) 59
 Rinne, M., see Nousiainen, J., 103 (2003) 97
 Rinne, M., see Nousiainen, J., 110 (2003) 61
 Ritchie, A., see Kadim, I.T., 109 (2003) 209
 Robinson, F.E., see Zuidhof, M.J., 105 (2003) 225
 Robinson, P.H., see Getachew, G., 102 (2002) 169
 Rocha, J.B.T., see Kozloski, G.V., 104 (2003) 29
 Rollin, F., see Haddi, M.-L., 104 (2003) 215
 Rosa, E., see Pereira, O., 101 (2002) 171
 Rose, S.P., see Wilkinson, J.M., 105 (2003) 215
 Rosenkrans Jr., C.F., see Turner, J.E., 109 (2003) 47
 Rossi, F., Maurizio, M., Francesco, M., Giovanna, C. and Gianfranco, P., Rumen degradation and intestinal digestibility of rumen protected amino acids: comparison between in situ and in vitro data, 108 (2003) 223
 Rosnagel, B.G., see Yu, P., 107 (2003) 45
 Roush, W.B. and Cravener, T.L., Stochastic true digestible amino acid values, 102 (2002) 225
 Rowe, J.B., see Twomey, L.N., 108 (2003) 61
 Rowe, J.B., see Twomey, L.N., 108 (2003) 71
 Rowe, J.B., see Twomey, L.N., 108 (2003) 83

- Russell, J.B., see Knaus, W.F., 102 (2002) 3
 Rymer, C. and Givens, D.I., Relationships between patterns of rumen fermentation measured in sheep and in situ degradability and the in vitro gas production profile of the diet, 101 (2002) 31

S

- Sacakli, P., see Tuncer, S.D., 107 (2003) 211
 Sahlström, S., see Skrede, G., 105 (2003) 135
 Sahoo, S.K., see Giri, S.S., 104 (2003) 169
 Sahu, A.K., see Giri, S.S., 104 (2003) 169
 Salem, I.B., see Ben Salem, H., 110 (2003) 45
 Sanchez, L.M.B., see Kozloski, G.V., 104 (2003) 29
 Sandoval-Castro, C.A., Capetillo-Leal, C., Cetina-Góngora, R. and Ramírez-Avilés, L., A mixture simplex design to study associative effects with an in vitro gas production technique, 101 (2002) 191
 Sanginés, L., see Nahed, J., 106 (2003) 209
 Sankhyan, S.K., see Bhatta, R., 101 (2002) 45
 Santini, F.J., see Pavan, E., 101 (2002) 61
 Santos-Ricalde, R.H., see Echeverría, V., 101 (2002) 151
 Santra, A. and Karim, S.A., Nutrient utilization and growth performance of defaunated and faunated lambs maintained on complete diets containing varying proportion of roughage and concentrate, 101 (2002) 87
 Sastry, V.R.B., see Nagalakshmi, D., 103 (2003) 1
 Sato, T., see Mandevu, P., 108 (2003) 25
 Sauviant, D., see Bravo, D., 108 (2003) 43
 Sauviant, D., see Offner, A., 106 (2003) 81
 Scarbrough, D.A., see Galdámez-Cabrera, N.W., 105 (2003) 185
 Scarbrough, D.A., see McBeth, L.J., 108 (2003) 147
 Scarbrough, D.A., see Turner, J.E., 109 (2003) 47
 Schlatter, L., see Mandevu, P., 105 (2003) 81
 Schroeder, G.E., see van Ryssen, J.B.J., 107 (2003) 15
 Schwab, E.C., Shaver, R.D., Lauer, J.G. and Coors, J.G., Estimating silage energy value and milk yield to rank corn hybrids, 109 (2003) 1
 Scollan, N.D., see Lee, M.R.F., 104 (2003) 59
 Šebek, L.B.J. and Everts, H., Rumen digesta kinetics in cold exposed prolific sheep: impact on protein evaluation, 101 (2002) 17
 Seigler, D.S., see Smith, A.H., 106 (2003) 165
 Selim, A.S.M., Pan, J., Suzuki, T., Ueda, K., Kobayashi, Y. and Tanaka, K., Postprandial changes in particle associated ruminal bacteria in sheep fed ammoniated rice straw, 102 (2002) 207
 Severin, B.F., see Weimer, P.J., 103 (2003) 41
 Sharma, K., see Patra, A.K., 109 (2003) 171
 Shaver, R.D., see Schwab, E.C., 109 (2003) 1
 Shem, M.N., Mtengeti, E.J., Luaga, M., Ichinohe, T. and Fujihara, T., Feeding value of wild Napier grass (*Pennisetum macrourum*) for cattle supplemented with protein and/or energy rich supplements, 108 (2003) 15
 Shinde, A.K., see Bhatta, R., 101 (2002) 45
 Shirley, J.E., see DeFrain, J.M., 107 (2003) 75
 Shyam Sunder, G., see Rama Rao, S.V., 106 (2003) 199
 Siciliano, P.D., see Dorton, K.L., 110 (2003) 31
 Silva, S., see Piva, A., 106 (2003) 149
 Singh, B., see Getachew, G., 102 (2002) 169
 Singh, G.P., see De, D., 103 (2003) 51
 Skinner Jr, J.V., see Turner, J.E., 109 (2003) 47
 Skrede, A., see Ljøkjel, K., 107 (2003) 87
 Skrede, A., see Ljøkjel, K., 107 (2003) 105
 Skrede, A., see Skrede, G., 105 (2003) 135
 Skrede, G., Herstad, O., Sahlström, S., Holck, A., Slinde, E. and Skrede, A., Effects of lactic acid fermentation on wheat and barley carbohydrate composition and production performance in the chicken, 105 (2003) 135
 Slinde, E., see Skrede, G., 105 (2003) 135
 Śliwiński, B.J., Soliva, C.R., Machmüller, A. and Kreuzer, M., Efficacy of plant extracts rich in secondary constituents to modify rumen fermentation, 101 (2002) 101
 Smith, A.H., Wallig, M.A., Seigler, D.S., Odenyo, A.A., McSweeney, C.S. and Mackie, R.I., Ameliorating the toxic effects of *Acacia angustissima* with polyethylene glycol in rats, 106 (2003) 165
 Sniffen, C.J., see de Ondarza, M.B., 101 (2002) 201
 Sniffen, C.J., see Mandevu, P., 105 (2003) 81
 Sniffen, C.J., see Mandevu, P., 108 (2003) 25
 Sniffen, C.J., see Uchida, K., 107 (2003) 1
 Soliva, C.R., see Hess, H.D., 109 (2003) 79
 Soliva, C.R., see Śliwiński, B.J., 101 (2002) 101
 Solís, C., see Nahed, J., 106 (2003) 209
 Soriano, F.D., see Loo, J.J., 109 (2003) 105
 Spanghero, M., Bocalon, S., Gracco, L. and Gruber, L., NDF degradability of hays measured in situ and in vitro, 104 (2003) 201
 Spanghero, M., see Getachew, G., 102 (2002) 169
 Spörndly, R., see Ekelund, A., 109 (2003) 95
 Srikandakumar, A., see Kadim, I.T., 109 (2003) 209
 Steinfeldt, S., González, E. and Bach Knudsen, K.E., Effects of inclusion with blue lupins (*Lupinus angustifolius*) in broiler diets and

- enzyme supplementation on production performance, digestibility and dietary AME content, 110 (2003) 185
- Steidlová, Š. and Kalač, P., Levels of biogenic amines in maize silages, 102 (2002) 197
- Steingass, H., see Getachew, G., 102 (2002) 169
- Sulas, L., see Valente, M.E., 108 (2003) 181
- Sun, Y.-M., see Yu, B., 102 (2002) 35
- Susmel, P., see Haddi, M.-L., 104 (2003) 215
- Suzuki, T., see Pan, J., 104 (2003) 13
- Suzuki, T., see Pan, J., 106 (2003) 69
- Suzuki, T., see Selim, A.S.M., 102 (2002) 207
- Svihus, B. and Gullord, M., Effect of chemical content and physical characteristics on nutritional value of wheat, barley and oats for poultry, 102 (2002) 71
- T**
- Taciak, M., see Pastuszewska, B., 106 (2003) 175
- Takahashi, J., see Yahaya, M.S., 101 (2002) 127
- Tamminga, S., see Elgersma, A., 108 (2003) 191
- Tanaka, K., see Pan, J., 104 (2003) 13
- Tanaka, K., see Pan, J., 106 (2003) 69
- Tanaka, K., see Selim, A.S.M., 102 (2002) 207
- Taube, F., see Volkers, K.C., 109 (2003) 183
- Taylor, S.J., see DePeters, E.J., 105 (2003) 109
- Tedeschi, L.O., see Knaus, W.F., 102 (2002) 3
- Tegegne, A., see Melaku, S., 108 (2003) 159
- Tekerli, M., see Eryavuz, A., 109 (2003) 35
- ter Meulen, U., see Ginting-Moentje, U., 102 (2002) 217
- Theodorou, M.K., see Lee, M.R.F., 104 (2003) 59
- Titgemeyer, E.C., see DeFrain, J.M., 107 (2003) 75
- Titgemeyer, E.C., see Klevesahl, E.A., 105 (2003) 5
- Titgemeyer, E.C., see Trater, A.M., 107 (2003) 173
- 't Mannetje, L., see Zemmeling, G., 105 (2003) 237
- Tolla, N., Mirkena, T. and Yimegnuhail, A., Effect of feed restriction on compensatory growth of Arsi (*Bos indicus*) bulls, 103 (2003) 29
- Toth, R., Lund, P., Weisbjerg, M.R. and Hvelplund, T., Effect of expander processing on fractional rate of maize and barley starch degradation in the rumen of dairy cows estimated using rumen evacuation and in situ techniques, 104 (2003) 71
- Trater, A.M., Titgemeyer, E.C., Drouillard, J.S. and Pike, J.N., Effects of processing factors on in vitro ammonia release from cooked molasses blocks containing urea, 107 (2003) 173
- Treacher, R., see Dhiman, T.R., 101 (2002) 115
- Trínáctý, J., Homolka, P., Zeman, L. and Richter, M., Whole tract and post ruminal digestibility determined by in situ ruminal, intestinal mobile nylon bag and whole tract nylon capsule methods, 106 (2003) 59
- Trocino, A., see Xiccato, G., 104 (2003) 153
- True, A.D., see Yamka, R.M., 109 (2003) 121
- Tsang, D.S., see Mandebvu, P., 105 (2003) 81
- Tuncer, S.D. and Sacakli, P., Rumen degradability characteristics of xylose treated canola and soybean meals, 107 (2003) 211
- Turner, J.E., Coblenz, W.K., Scarbrough, D.A., Rhein, R.T., Coffey, K.P., Johnson, Z.B., Rosenkrans Jr., C.F., Kellogg, D.W. and Skinner Jr., J.V., Changes in nutritive value of tall fescue hay as affected by natural rainfall and moisture concentration at baling, 109 (2003) 47
- Turner, J.E., see Galdámez-Cabrera, N.W., 105 (2003) 185
- Turner, J.E., see McBeth, L.J., 108 (2003) 147
- Twomey, L.N., Pluske, J.R., Rowe, J.B., Choct, M., Brown, W. and Pethick, D.W., The replacement value of sorghum and maize with or without supplemental enzymes for rice in extruded dog foods, 108 (2003) 61
- Twomey, L.N., Pluske, J.R., Rowe, J.B., Choct, M., Brown, W. and Pethick, D.W., The effects of added fructooligosaccharide (Raftilose® P95) and inulinase on faecal quality and digestibility in dogs, 108 (2003) 83
- Twomey, L.N., Pluske, J.R., Rowe, J.B., Choct, M., Brown, W., McConnell, M.F. and Pethick, D.W., The effects of increasing levels of soluble non-starch polysaccharides and inclusion of feed enzymes in dog diets on faecal quality and digestibility, 108 (2003) 71
- U**
- Uchida, K., Mandebvu, P., Ballard, C.S., Sniffen, C.J. and Carter, M.P., Effect of feeding methionine supplements with different rumen escape values on performance of high producing dairy cows in early lactation, 107 (2003) 1
- Udén, P., see Dung, N.N.X., 102 (2002) 109
- Ueda, K., see Pan, J., 104 (2003) 13
- Ueda, K., see Pan, J., 106 (2003) 69
- Ueda, K., see Selim, A.S.M., 102 (2002) 207

V

- Vadiveloo, J., The effect of agronomic improvement and urea treatment on the nutritional value of Malaysian rice straw varieties, 108 (2003) 133
- Vaithyanathan, S., see Bhatta, R., 101 (2002) 45
- Valdez, F., see Mandebvu, P., 105 (2003) 81
- Valente, M.E., Borreani, G., Caredda, S., Cavallarin, L. and Sulas, L., Ensiling forage garland (*Chrysanthemum coronarium* L.) at two stages of maturity and at different wilting levels, 108 (2003) 181
- Valk, H., see Ekelund, A., 109 (2003) 95
- van der Horst, H., see Elgersma, A., 108 (2003) 191
- van Gelder, A.H., see Becker, P.M., 110 (2003) 159
- van Ryssen, J.B.J. and Schroeder, G.E., Effect of heat processing of protein sources on the disappearance of their selenium from mobile bags in the digestive tract of dairy cows, 107 (2003) 15
- Van Soest, P.J., see Cannas, A., 106 (2003) 95
- Van Soest, P.J., see Carpino, S., 105 (2003) 205
- van Wikselaar, P.G., see Becker, P.M., 110 (2003) 159
- Vanacker, J.M., see De Boever, J.L., 101 (2002) 73
- Vanacker, J.M., see De Boever, J.L., 107 (2003) 29
- Vanhatalo, A., see Choi, C.W., 102 (2002) 15
- Vasquez, M.G., see Arelovich, H.M., 105 (2003) 29
- Vedres, D.D., see Yang, W.Z., 102 (2002) 137
- Veira, D.M., see Bach, S.J., 104 (2003) 179
- Verma, D.L., see Bhatta, R., 101 (2002) 45
- Verstegen, M.W.A., see Weurding, R.E., 110 (2003) 175
- Vidotti, R.M., Viegas, E.M.M. and Carneiro, D.J., Amino acid composition of processed fish silage using different raw materials, 105 (2003) 199
- Viegas, E.M.M., see Vidotti, R.M., 105 (2003) 199
- Villamide, M.J., García, J., Cervera, C., Blas, E., Maertens, L. and Perez, J.M., Comparison among methods of nutritional evaluation of dietary ingredients for rabbits, 109 (2003) 195
- Viveros, A., see Brenes, A., 110 (2003) 201
- Volkers, K.C., Wachendorf, M., Loges, R., Jovanovic, N.J. and Taube, F., Prediction of the quality of forage maize by near-infrared reflectance spectroscopy, 109 (2003) 183

W

- Wachendorf, M., see Volkers, K.C., 109 (2003) 183
- Waldenstedt, L., Inborr, J., Hansson, I. and Elwinger, K., Effects of astaxanthin-rich algal meal (*Haematococcus pluvalis*) on growth performance, caecal campylobacter and clostridial counts and tissue astaxanthin concentration of broiler chickens, 108 (2003) 119
- Walker, R.D., see Baidoo, S.K., 104 (2003) 133
- Wallig, M.A., see Smith, A.H., 106 (2003) 165
- Walters, J.L., see Dhiman, T.R., 101 (2002) 115
- Wang, J., see Lindberg, J.E., 104 (2003) 121
- Wang, J.F., Jensen, B.B., Jørgensen, H., Li, D.F. and Lindberg, J.E., Ileal and total tract digestibility, and protein and fat balance in pigs fed rice with addition of potato starch, sugar beet pulp or wheat bran, 102 (2002) 125
- Wang, J.F., Li, D.F., Jensen, B.B., Jakobsen, K., Xing, J.J., Gong, L.M. and Zhu, Y.H., Effect of type and level of fibre on gastric microbial activity and short-chain fatty acid concentrations in gestating sows, 104 (2003) 95
- Webster, A.J.F., Kaya, S., Djouvinov, D.S., Kitcherside, M.A. and Glen, E.F., Purine excretion and estimated microbial protein yield in sheep fed diets differing in protein degradability, 105 (2003) 123
- Weimer, P.J., Mertens, D.R., Ponnampalam, E., Severin, B.F. and Dale, B.E., FIBEX-treated rice straw as a feed ingredient for lactating dairy cows, 103 (2003) 41
- Weisbjerg, M.R., see Mlay, P.S., 109 (2003) 19
- Weisbjerg, M.R., see Tothi, R., 104 (2003) 71
- Weurding, R.E., Enting, H. and Verstegen, M.W.A., The effect of site of starch digestion on performance of broiler chickens, 110 (2003) 175
- Wickersham, T.A., see Klevesahl, E.A., 105 (2003) 5
- Wilkinson, J.M., A laboratory evaluation of comfrey (*Symphytum officinale* L.) as a forage crop for ensilage, 104 (2003) 227
- Wilkinson, J.M., Miller, H.M., McCracken, K.J., Knox, A., McNab, J. and Rose, S.P., Effect of specific weight on the metabolizable energy content of four cultivars of wheat grain in ewes, 105 (2003) 215
- Williams, A.J., see Kitessa, S.M., 108 (2003) 1
- Wolford, H.M., see Mandebvu, P., 108 (2003) 25
- Woods, V.B., Moloney, A.P. and O'Mara, F.P., The nutritive value of concentrate feedstuffs for ruminant animals. Part II: In situ ruminal degradability of crude protein, 110 (2003) 131
- Woods, V.B., Moloney, A.P., Calsamiglia, S. and O'Mara, F.P., The nutritive value of concentrate feedstuffs for ruminant animals. Part III. Small intestinal digestibility as measured by in vitro or mobile bag techniques, 110 (2003) 145

Woods, V.B., O'Mara, F.P. and Moloney, A.P., The nutritive value of concentrate feedstuffs for ruminant animals. Part I: In situ ruminal degradability of dry matter and organic matter, 110 (2003) 111

Wray, T.L., see Zuidhof, M.J., 105 (2003) 225

X

Xiccato, G., Trocino, A., De Boever, J.L., Maertens, L., Carabaño, R., Pascual, J.J., Perez, J.M., Gidenne, T. and Falcao-E-Cunha, L., Prediction of chemical composition, nutritive value and ingredient composition of European compound feeds for rabbits by near infrared reflectance spectroscopy (NIRS), 104 (2003) 153

Xing, J.J., see Wang, J.F., 104 (2003) 95

Y

Yabuuchi, Y., see Mandebvu, P., 108 (2003) 25

Yahaya, M.S., Kawai, M., Takahashi, J. and Matsuoka, S., The effect of different moisture contents at ensiling on silo degradation and digestibility of structural carbohydrates of orchardgrass, 101 (2002) 127

Yamka, R.M., Jamikorn, U., True, A.D. and Harmon, D.L., Evaluation of soyabean meal as a protein source in canine foods, 109 (2003) 121

Yáñez Ruiz, D.R., see Molina Alcaide, E., 110 (2003) 3

Yáñez Ruiz, D.R., see Martín García, A.I., 107 (2003) 61

Yang, Q.M., see Baidoo, S.K., 104 (2003) 133

Yang, W.Z., Beauchemin, K.A. and Vedres, D.D., Effects of pH and fibrolytic enzymes on digestibility, bacterial protein synthesis, and fermentation in continuous culture, 102 (2002) 137

Yano, H., see Park, W.-Y., 101 (2002) 55

Yemm, R.S., see Dorton, K.L., 110 (2003) 31

Yenice, E., see Çiftçi, I., 105 (2003) 149

Yimegnuhail, A., see Tolla, N., 103 (2003) 29

Yosef, E., see Miron, J., 106 (2003) 20

Yu, B., Sun, Y.-M. and Chiou, P.W.-S., Effects of glucanase inclusion in a de-hulled barley diet on the growth performance and nutrient digestion of broiler chickens, 102 (2002) 35

Yu, P., Meier, J.A., Christensen, D.A., Rossnagel, B.G. and McKinnon, J.J., Using the NRC-2001 model and the DVE/OEB system to evaluate nutritive values of Harrington (malting-type) and Valier (feed-type) barley for ruminants, 107 (2003) 45

Yuan, J., see Guo, Y., 107 (2003) 143

Z

Zacharias, B., Ott, H. and Drochner, W., The influence of dietary microbial phytase and copper on copper status in growing pigs, 106 (2003) 139

Zaman, M.S., Moyer, J.R., Boswall, A.L. and Mir, Z., Nutritional quality and yield of seedling alfalfa established with a barley companion crop and weeds, 103 (2003) 163

Zaman, M.S., see Dhiman, T.R., 101 (2002) 115

Zeman, L., see Trínáctý, J., 106 (2003) 59

Zemmelink, G. and 't Mannetje, L., Erratum to "Value for animal production (VAP): a new criterion for tropical forage evaluation" [Animal Feed Science and Technology 96 (2002) 31-42], 105 (2003) 237

Zervas, G., see Goulas, C., 105 (2003) 43

Zhang, G., see Guo, Y., 107 (2003) 143

Zhu, Y.H., see Wang, J.F., 104 (2003) 95

Zimmermann, B., Lantzsch, H.-J., Mosenthin, R., Biesalski, H.K. and Drochner, W., Additivity of the effect of cereal and microbial phytases on apparent phosphorus absorption in growing pigs fed diets with marginal P supply, 104 (2003) 143

Zinn, R.A., see DePeters, E.J., 105 (2003) 109

Zuidhof, M.J., Molnar, C.L., Morley, F.M., Wray, T.L., Robinson, F.E., Khan, B.A., Al-Ani, L. and Goonewardene, L.A., Nutritive value of house fly (*Musca domestica*) larvae as a feed supplement for turkey poults, 105 (2003) 225



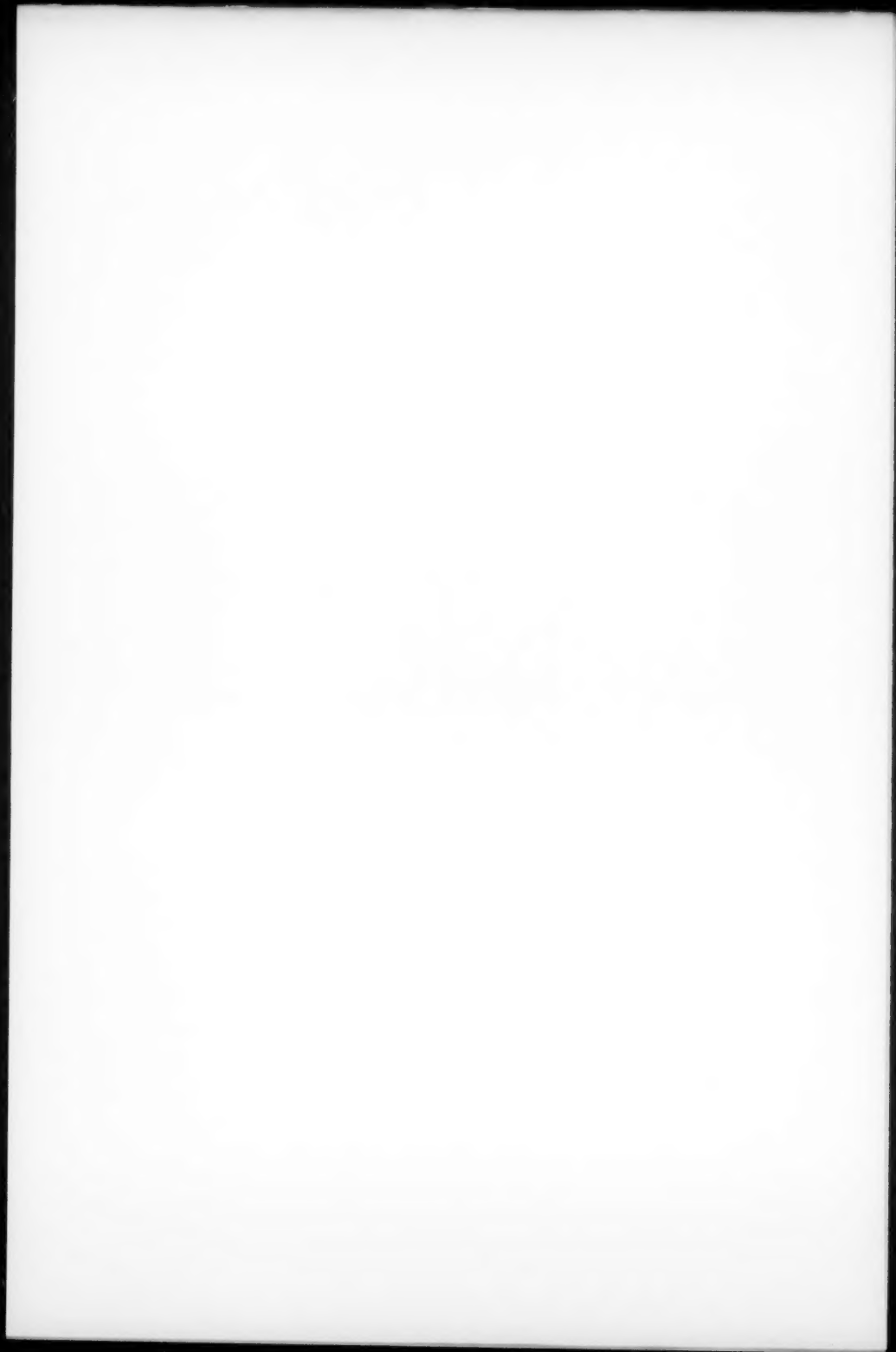
Animal Feed Science and Technology
(2003) 239–276

ANIMAL FEED
SCIENCE AND
TECHNOLOGY

www.elsevier.com/locate/anifeedsci

Subject index

*Animal Feed Science and Technology, volumes 101–110,
2002–2003*



A

Acacia angustissima

Ameliorating the toxic effects of *Acacia angustissima* with polyethylene glycol in rats, 106 (2003) 165

Acetic acid

Effect of *Leucaena leucocephala* leaf meal treated with acetic acid or sodium hydroxide on apparent digestibility and nitrogen retention in pig diets, 101 (2002) 151

Acid silage

Amino acid composition of processed fish silage using different raw materials, 105 (2003) 199

Acorn

Microbial caecal fermentation in Iberic or Landrace pigs given acorn/sorghum or maize diets estimated in vitro using the gas production technique, 102 (2002) 93

Ad libitum feed intake

Carbon balances for in vitro digestion and fermentation of potential roughages for pregnant sows, 110 (2003) 159

Adaptation

Chick adaptation to diets based on milling fractions of rye varying in arabinoxylans content, 101 (2002) 135

Influence of prolonged adaptation periods on starch degradation in the digestive tract of dairy cows, 103 (2003) 15

Additivity

Additivity of the effect of cereal and microbial phytases on apparent phosphorus absorption in growing pigs fed diets with marginal P supply, 104 (2003) 143

Aerobic deterioration

Changes in chemical composition and nutritive value of urea treated whole crop wheat during exposure to air, 102 (2002) 181

Agronomic quality

The effect of agronomic improvement and urea treatment on the nutritional value of Malaysian rice straw varieties, 108 (2003) 133

Alfalfa

Nutritional quality and yield of seedling alfalfa established with a barley companion crop and weeds, 103 (2003) 163

Use of fibrolytic enzymes to improve the nutritive value of ruminant diets. A biochemical and in vitro rumen degradation assessment, 107 (2003) 201

Alkalis

Effects of alkalis, oxidants and urea on the nutritive value of Rhodes grass (*Chloris gayana* cv. Callide), 103 (2003) 113

Alternate protein resources

Evaluation of the variability in chemical composition and digestibility of different lupin (*Lupinus angustifolius*) kernel meals when fed to rainbow trout (*Oncorhynchus mykiss*), 107 (2003) 117

AME_n

Effects of inclusion with blue lupins (*Lupinus angustifolius*) in broiler diets and enzyme supplementation on production performance, digestibility and dietary AME content, 110 (2003) 185

Amino acid

Effects of prepress-solvent extraction on the nutritional value of canola meal for broiler chickens, 104 (2003) 111

Nutritive value of house fly (*Musca domestica*) larvae as a feed supplement for turkey poults, 105 (2003) 225

In situ digestibility of protein in barley grain (*Hordeum vulgare*) and peas (*Pisum sativum* L.) in dairy cows: influence of heat treatment and glucose addition, 107 (2003) 87

Evaluation of soyabean meal as a protein source in canine foods, 109 (2003) 121

Ammonia

Efficacy of plant extracts rich in secondary constituents to modify rumen fermentation, 101 (2002) 101

Effect of increasing availability of water-soluble carbohydrates on in vitro rumen fermentation, 104 (2003) 59

Effects of processing factors on in vitro ammonia release from cooked molasses blocks containing urea, 107 (2003) 173

Ammoniated rice straw

Postprandial changes in particle associated ruminal bacteria in sheep fed ammoniated rice straw, 102 (2002) 207

Animal fat

Effect of dietary animal fat and methionine on dairy ewes milk yield and milk composition, 105 (2003) 43

Animal feed

A laboratory evaluation of comfrey (*Symphytum officinale* L.) as a forage crop for ensilage, 104 (2003) 227

Animal health

The effect of condensed tannins on the nutrition and health of ruminants fed fresh temperate forages: a review, 106 (2003) 3

Animal production

The effect of condensed tannins on the nutrition and health of ruminants fed fresh temperate forages: a review, 106 (2003) 3

Antibiotic supplementation

The use of a model ileum to investigate the effects of novel and existing antimicrobials on indigenous porcine gastrointestinal microflora: using vancomycin as an example, 103 (2003) 123

Apparent digestibility

Effect of specific weight on the metabolizable energy content of four cultivars of wheat grain in ewes, 105 (2003) 215

Nutritive value of house fly (*Musca domestica*) larvae as a feed supplement for turkey poults, 105 (2003) 225

Influence of feeding various phosphorus sources on apparent digestibility of phosphorus in dairy cows, 109 (2003) 95

Effect of low levels of dietary cobalt on apparent nutrient digestibility in Omani goats, 109 (2003) 209

Apparent metabolizable energy

Nutritive value of house fly (*Musca domestica*) larvae as a feed supplement for turkey poults, 105 (2003) 225

Aquaculture feeds

Evaluation of the variability in chemical composition and digestibility of different lupin (*Lupinus angustifolius*) kernel meals when fed to rainbow trout (*Oncorhynchus mykiss*), 107 (2003) 117

Arabinoxylans

Chick adaptation to diets based on milling fractions of rye varying in arabinoxylans content, 101 (2002) 135

Arsi bulls

Effect of feed restriction on compensatory growth of Arsi (*Bos indicus*) bulls, 103 (2003) 29

Associative effects

A mixture simplex design to study associative effects with an in vitro gas production technique, 101 (2002) 191

B

***B. skutchii* leaves**

Evaluation of the use of *Buddleia skutchii* tree leaves and Kikuyu (*Pennisetum clandestinum*) grass hay in sheep feeding, 106 (2003) 209

Bacteria

The use of a model ileum to investigate the effects of novel and existing antimicrobials on indigenous porcine gastrointestinal microflora: using vancomycin as an example, 103 (2003) 123

Effects of dietary oligosaccharides on microbial diversity and fructo-oligosaccharide degrading bacteria in faeces of piglets post-weaning, 109 (2003) 133

Bacteria count

Changes in the levels of histamine during processing and storage of fish meal, 107 (2003) 161

Bacterial infection

A review of interactions between dietary fibre and the intestinal mucosa, and their consequences on digestive health in young non-ruminant animals, 108 (2003) 95

Bacterial protein

Effects of pH and fibrolytic enzymes on digestibility, bacterial protein synthesis, and fermentation in continuous culture, 102 (2002) 137

Baling

Changes in nutritive value of tall fescue hay as affected by natural rainfall and moisture concentration at baling, 109 (2003) 47

Barley

Effect of chemical content and physical characteristics on nutritional value of wheat, barley and oats for poultry, 102 (2002) 71

Phytate degradation in soaked and fermented liquid feed—effect of diet, time of soaking, heat treatment, phytase activity, pH and temperature, 103 (2003) 141

Effects of lactic acid fermentation on wheat and barley carbohydrate composition and production performance in the chicken, 105 (2003) 135

Barley cultivar

Influence of naked barley cultivar with normal, amylose-rich or amylopectin-rich starch and enzyme supplementation on digestibility and piglet performance, 104 (2003) 121

Barley variety

Using the NRC-2001 model and the DVE/OEB system to evaluate nutritive values of Harrington (malting-type) and Valier (feed-type) barley for ruminants, 107 (2003) 45

Batch culture

Effects of a *Saccharomyces cerevisiae* feed supplement on *Escherichia coli* O157:H7 in ruminal fluid in vitro, 104 (2003) 179

Beef cattle

Effect of a wide range in the ratio of supplemental rumen degradable protein to starch on utilization of low-quality, grass hay by beef steers, 105 (2003) 5

Bermudagrass

In situ ruminal degradation of dry matter and fiber from bermudagrass fertilized with different nitrogen rates and harvested on two dates, 105 (2003) 185

Bioavailability

Relative bioavailability of organic zinc sources based on tissue zinc and metallothionein in chicks fed conventional dietary zinc concentrations, 101 (2002) 161

Biogenic amines

Levels of biogenic amines in maize silages, 102 (2002) 197

Biohydrogenation

Dietary canola or soybean oil with two levels of conjugated linoleic acids (CLA) alter profiles of

18:1 and 18:2 isomers in blood plasma and milk fat from dairy cows, 103 (2003) 63

Grazing allowance after the morning or afternoon milking for lactating cows fed a total mixed ration (TMR) enhances *trans*11-18:1 and *cis*9-*trans*11-18:2 (rumenic acid) in milk fat to different extents, 109 (2003) 105

Biological value

The protein value of differently processed rapeseed solvent meal and cake assessed by in vitro methods and in tests with rats, 106 (2003) 175

Blood meal

Effects of urea, isolated soybean protein and blood meal on growing steers fed a corn-based diet, 102 (2002) 3

Effect of heat processing of protein sources on the disappearance of their selenium from mobile bags in the digestive tract of dairy cows, 107 (2003) 15

Blood parameters

The effect of citric acid and microbial phytase on mineral utilization in broiler chicks, 110 (2003) 201

Body composition

Brassica by-products in diets of rainbow trout (*Oncorhynchus mykiss*) and their effects on performance, body composition, thyroid status and liver histology, 101 (2002) 171

Bone mineral

The effect of citric acid and microbial phytase on mineral utilization in broiler chicks, 110 (2003) 201

Bone strength

Interactions between dietary phosphorus level, phytase supplementation and pelleting on performance and bone parameters of broilers fed high levels of rice bran, 103 (2003) 155

Bran

Chick adaptation to diets based on milling fractions of rye varying in arabinoxylans content, 101 (2002) 135

Broiler

Effect of chemical content and physical characteristics on nutritional value of wheat, barley and oats for poultry, 102 (2002) 71

Interactions between dietary phosphorus level, phytase supplementation and pelleting on performance and bone parameters of broilers fed high levels of rice bran, 103 (2003) 155

Biological availability of calcium in broiler chicks from different calcium sources found in Nigeria, 104 (2003) 209

Effect of different choice feeding methods based on whole wheat on performance of male broiler chickens, 106 (2003) 131

Requirement of calcium for commercial broilers and white leghorn layers at low dietary phosphorus levels, 106 (2003) 199

Broiler chickens

Effects of glucanase inclusion in a de-hulled barley diet on the growth performance and nutrient digestion of broiler chickens, 102 (2002) 35

Addition of β -ionone to the diet fails to affect growth performance in female broiler chickens, 106 (2003) 219

The effect of site of starch digestion on performance of broiler chickens, 110 (2003) 175

Effects of inclusion with blue lupins (*Lupinus angustifolius*) in broiler diets and enzyme supplementation on production performance, digestibility and dietary AME content, 110 (2003) 185

Broiler meat stability

Effects of source and level of magnesium and Vitamin E on prevention of hepatic peroxidation and oxidative deterioration of broiler meat, 107 (2003) 143

Broiler performance

Effect of excess leucine in low protein diet on ketosis in 3-week-old male broiler chicks fed different levels of isoleucine and valine, 103 (2003) 171

Buffaloes

Urinary purine derivative excretion in swamp buffaloes after duodenal purine base infusion, 104 (2003) 191

Byproduct

Tropical fibre sources for pigs—digestibility, digesta retention and estimation of fibre digestibility in vitro, 102 (2002) 109

Development and evaluation of a pelleted feedstuff containing condensed corn steep liquor and raw soybean hulls for dairy cattle diets, 107 (2003) 75

C

Cabbage meal

Brassica by-products in diets of rainbow trout (*Oncorhynchus mykiss*) and their effects on performance, body composition, thyroid status and liver histology, 101 (2002) 171

Caecal fermentation

Microbial caecal fermentation in Iberic or Landrace pigs given acorn/sorghum or maize diets estimated in vitro using the gas production technique, 102 (2002) 93*

Ca-LCFA of red palm oil

Influence of dietary protected lipids on intake and digestibility of straw based diets in Deccani sheep, 106 (2003) 29

Calcium

Biological availability of calcium in broiler chicks from different calcium sources found in Nigeria, 104 (2003) 209

Requirement of calcium for commercial broilers and white leghorn layers at low dietary phosphorus levels, 106 (2003) 199

Calcium salts

Effect of feeding calcium salts of long-chain fatty acids, from palm fatty acid distillate or soybean oil, to high producing dairy cows on milk yield and composition, and on selected blood and reproductive parameters, 108 (2003) 25

Calves

Effect of cold process monensin enriched urea molasses mineral blocks on performance of crossbred calves fed a wheat straw based diet, 103 (2003) 51

Campylobacter jejuni

Effects of astaxanthin-rich algal meal (*Haematococcus pluvalis*) on growth performance, caecal campylobacter and clostridial counts and tissue astaxanthin concentration of broiler chickens, 108 (2003) 119

Canola meal

Effects of prepress-solvent extraction on the nutritional value of canola meal for broiler chickens, 104 (2003) 111

Rumen degradability characteristics of xylose treated canola and soybean meals, 107 (2003) 211

Canola oil

Dietary canola or soybean oil with two levels of conjugated linoleic acids (CLA) alter profiles of 18:1 and 18:2 isomers in blood plasma and milk fat from dairy cows, 103 (2003) 63

Carbohydrate addition

Gas production from straw incubated in vitro with different levels of purified carbohydrates, 101 (2002) 1

Carcass

Effect of feed restriction on compensatory growth of Arsi (*Bos indicus*) bulls, 103 (2003) 29

Carotenoid

Effects of astaxanthin-rich algal meal (*Haematococcus pluvalis*) on growth performance, caecal campylobacter and clostridial counts and tissue astaxanthin concentration of broiler chickens, 108 (2003) 119

Catalase

Effects of source and level of magnesium and Vitamin E on prevention of hepatic peroxidation and oxidative deterioration of broiler meat, 107 (2003) 143

Cattle

Willow (*Salix* sp.) as a supplement for grazing cattle under drought conditions, 104 (2003) 1

Performance of beef cattle grazing oats supplemented with energy, escape protein or high quality hay, 105 (2003) 29

Use of animal and dietary information to predict rumen turnover, 106 (2003) 95

Effects of processing factors on in vitro ammonia release from cooked molasses blocks containing urea, 107 (2003) 173

Cell wall

Identification of lucerne stem cell wall traits related to in vitro neutral detergent fibre digestibility, 110 (2003) 17

Cellulase

The effect of genotype and dietary fibre level on the caecal bacterial enzyme activity of young piglets: digestive consequences, 106 (2003) 119

Cellulose

Identification of lucerne stem cell wall traits related to in vitro neutral detergent fibre digestibility, 110 (2003) 17

Cereal phytase

Additivity of the effect of cereal and microbial phytases on apparent phosphorus absorption in growing pigs fed diets with marginal P supply, 104 (2003) 143

Cereals

Phytate degradation in soaked and fermented liquid feed—effect of diet, time of soaking, heat treatment, phytase activity, pH and temperature, 103 (2003) 141

Cheese

Selection of forage species by dairy cattle on complex Sicilian pasture, 105 (2003) 205

Chemical composition

Prediction of chemical composition, nutritive value and ingredient composition of European compound feeds for rabbits by near infrared reflectance spectroscopy (NIRS), 104 (2003) 153

Chemical composition and nutrients availability for goats and sheep of two-stage olive cake and olive leaves, 107 (2003) 61

Merit of *Gleditsia triacanthos* pods in animal feeding. Chemical composition and nutritional evaluation, 107 (2003) 151

Chemical contents

Effect of chemical content and physical characteristics on nutritional value of wheat, barley and oats for poultry, 102 (2002) 71

Chewing

Effect of mastication on degradation of orchard-grass hay stem by rumen microbes: fibrolytic enzyme activities and microbial attachment, 106 (2003) 69

Chick

Chick adaptation to diets based on milling fractions of rye varying in arabinoxylans content, 101 (2002) 135

Relative bioavailability of organic zinc sources based on tissue zinc and metallothionein in chicks fed conventional dietary zinc concentrations, 101 (2002) 161

Biological availability of calcium in broiler chicks from different calcium sources found in Nigeria, 104 (2003) 209

The effect of citric acid and microbial phytase on mineral utilization in broiler chicks, 110 (2003) 201

Chicken performance

Effects of lactic acid fermentation on wheat and barley carbohydrate composition and production performance in the chicken, 105 (2003) 135

Chickpeas

Partially or totally replacing soybean meal and maize by chickpeas in lamb diets: intramuscular fatty acid composition, 108 (2003) 215

Choice feeding

Effect of different choice feeding methods based on whole wheat on performance of male broiler chickens, 106 (2003) 131

Cholesterol

Addition of β -ionone to the diet fails to affect growth performance in female broiler chickens, 106 (2003) 219

Chromium

The effect of dietary supplementation with trivalent chromium on production performance of laying hens and the chromium content in the yolk, 106 (2003) 149

Chrysanthemum coronarium L

Ensiling forage garland (*Chrysanthemum coronarium* L.) at two stages of maturity and at different wilting levels, 108 (2003) 181

Ciliate protozoa

Nutrient utilization and growth performance of defaunated and faunated lambs maintained on complete diets containing varying proportion of roughage and concentrate, 101 (2002) 87

Citric acid

The effect of citric acid and microbial phytase on mineral utilization in broiler chicks, 110 (2003) 201

Clostridium perfringens

Effects of astaxanthin-rich algal meal (*Haematococcus pluvalis*) on growth performance, caecal campylobacter and clostridial counts and tissue

astaxanthin concentration of broiler chickens, 108 (2003) 119

Cobalt deficiency

Effect of low levels of dietary cobalt on apparent nutrient digestibility in Omani goats, 109 (2003) 209

Cockerels

Effect of chemical content and physical characteristics on nutritional value of wheat, barley and oats for poultry, 102 (2002) 71

Cold exposure

Rumen digesta kinetics in cold exposed prolific sheep: impact on protein evaluation, 101 (2002) 17

Cold process

Effect of cold process monensin enriched urea molasses mineral blocks on performance of crossbred calves fed a wheat straw based diet, 103 (2003) 51

Comfrey (*Symphytum officinale*)

A laboratory evaluation of comfrey (*Symphytum officinale* L.) as a forage crop for ensilage, 104 (2003) 227

Companion crop

Nutritional quality and yield of seedling alfalfa established with a barley companion crop and weeds, 103 (2003) 163

Compensatory growth

Effect of feed restriction on compensatory growth of Arsi (*Bos indicus*) bulls, 103 (2003) 29

Composition

A laboratory evaluation of comfrey (*Symphytum officinale* L.) as a forage crop for ensilage, 104 (2003) 227

Compound feeds

Prediction of chemical composition, nutritive value and ingredient composition of European compound feeds for rabbits by near infrared reflectance spectroscopy (NIRS), 104 (2003) 153

Rumen degradation characteristics of nutrients in compound feeds and the evaluation of tables, laboratory methods and NIRS as predictors, 107 (2003) 29

Concentrates

Effect of feed restriction on compensatory growth of Arsi (*Bos indicus*) bulls, 103 (2003) 29

The nutritive value of concentrate feedstuffs for ruminant animals. Part I: In situ ruminal degradability of dry matter and organic matter, 110 (2003) 111

The nutritive value of concentrate feedstuffs for ruminant animals. Part II: In situ ruminal degradability of crude protein, 110 (2003) 131

The nutritive value of concentrate feedstuffs for ruminant animals. Part III. Small intestinal digestibility as measured by in vitro or mobile bag techniques, 110 (2003) 145

Condensed corn steep liquor

Development and evaluation of a pelleted feedstuff containing condensed corn steep liquor and raw soybean hulls for dairy cattle diets, 107 (2003) 75

Condensed tannins

Willow (*Salix* sp.) as a supplement for grazing cattle under drought conditions, 104 (2003) 1

The effect of condensed tannins on the nutrition and health of ruminants fed fresh temperate forages: a review, 106 (2003) 3

Effect of different doses of quebracho tannins extract on rumen fermentation in ewes, 109 (2003) 65

Conjugated linoleic acids (CLA)

Dietary canola or soybean oil with two levels of conjugated linoleic acids (CLA) alter profiles of 18:1 and 18:2 isomers in blood plasma and milk fat from dairy cows, 103 (2003) 63

Partially or totally replacing soybean meal and maize by chickpeas in lamb diets: intramuscular fatty acid composition, 108 (2003) 215

Continuous culture

Effects of pH and fibrolytic enzymes on digestibility, bacterial protein synthesis, and fermentation in continuous culture, 102 (2002) 137

Effects of a *Saccharomyces cerevisiae* feed supplement on *Escherichia coli* O157:H7 in ruminal fluid in vitro, 104 (2003) 179

Copper

The influence of dietary microbial phytase and copper on copper status in growing pigs, 106 (2003) 139

Effects of copper source and concentration on copper status and immune function in growing and finishing steers, 110 (2003) 31

Corn

Effect of expander processing on fractional rate of maize and barley starch degradation in the rumen of dairy cows estimated using rumen evacuation and in situ techniques, 104 (2003) 71

Corn silage

Soybean hulls as a replacement of forage neutral detergent fiber in total mixed rations of lactating cows, 106 (2003) 21

Estimating silage energy value and milk yield to rank corn hybrids, 109 (2003) 1

Cottonseed meal

Rumen fermentation patterns and nutrient digestion in lambs fed cottonseed meal supplemental diets, 103 (2003) 1

Cows

Performance of dairy cows fed forage treated with fibrolytic enzymes prior to feeding, 101 (2002) 115

Rumen degradation and intestinal digestibility of rumen protected amino acids: comparison between in situ and in vitro data, 108 (2003) 223

Crude protein

Prediction of the quality of forage maize by near-infrared reflectance spectroscopy, 109 (2003) 183

D**D,L-Methionine**

Effect of feeding methionine supplements with different rumen escape values on performance of high producing dairy cows in early lactation, 107 (2003) 1

Dairy cattle

Estimating silage energy value and milk yield to rank corn hybrids, 109 (2003) 1

Dairy cow

Influence of prolonged adaptation periods on starch degradation in the digestive tract of dairy cows, 103 (2003) 15

Effect of feeding an energy supplement prepartum and postpartum on milk yield and composition, and incidence of ketosis in dairy cows, 105 (2003) 81

Selection of forage species by dairy cattle on complex Sicilian pasture, 105 (2003) 205

Usefulness of ionophores for lactating dairy cows: a review, 106 (2003) 39

Effect of feeding methionine supplements with different rumen escape values on performance of high producing dairy cows in early lactation, 107 (2003) 1

In situ digestibility of starch in barley grain (*Hordeum vulgare*) and peas (*Pisum sativum* L.) in dairy cows: influence of heat treatment and glucose addition, 107 (2003) 105

Effect of feeding calcium salts of long-chain fatty acids, from palm fatty acid distillate or soybean oil, to high producing dairy cows on milk yield and composition, and on selected blood and reproductive parameters, 108 (2003) 25

Influence of feeding various phosphorus sources on apparent digestibility of phosphorus in dairy cows, 109 (2003) 95

Dairy ewes

Effect of dietary animal fat and methionine on dairy ewes milk yield and milk composition, 105 (2003) 43

Database generation

The nutritive value of concentrate feedstuffs for ruminant animals. Part I: In situ ruminal degradability of dry matter and organic matter, 110 (2003) 111

The nutritive value of concentrate feedstuffs for ruminant animals. Part II: In situ ruminal degradability of crude protein, 110 (2003) 131

Deccani sheep

Influence of dietary protected lipids on intake and digestibility of straw based diets in Deccani sheep, 106 (2003) 29

Defaunation

Nutrient utilization and growth performance of defaunated and faunated lambs maintained on complete diets containing varying proportion of roughage and concentrate, 101 (2002) 87

Effects of urea and sulfur on performance of faunate and defaunate Ramlic lambs, and some rumen and blood parameters, 109 (2003) 35

Degradability

Effect of expander processing on fractional rate of maize and barley starch degradation in the rumen of dairy cows estimated using rumen evacuation and in situ techniques, 104 (2003) 71

NDF degradability of hays measured in situ and in vitro, 104 (2003) 201

Merit of *Gleditsia triacanthos* pods in animal feeding. Chemical composition and nutritional evaluation, 107 (2003) 151

Degradation kinetics

In situ ruminal degradation of dry matter and fiber from bermudagrass fertilized with different nitrogen rates and harvested on two dates, 105 (2003) 185

De-hulled barley

Effects of glucanase inclusion in a de-hulled barley diet on the growth performance and nutrient digestion of broiler chickens, 102 (2002) 35

Δ^9 -desaturase

Grazing allowance after the morning or afternoon milking for lactating cows fed a total mixed ration (TMR) enhances *trans*11-18:1 and *cis*9-*trans*11-18:2 (rumenic acid) in milk fat to different extents, 109 (2003) 105

Desolventization/toasting

Effects of prepress-solvent extraction on the nutritional value of canola meal for broiler chickens, 104 (2003) 111

DHA

Fish oil metabolism in ruminants. III. Transfer of *n*-3 polyunsaturated fatty acids (PUFA) from tuna oil into sheep's milk, 108 (2003) 1

Diaminopimelic acid

Postprandial changes in particle associated ruminal bacteria in sheep fed ammoniated rice straw, 102 (2002) 207

Diarrhoea

Effects of different sources and levels of dietary fibre in diets on performance, digesta characteristics and antibiotic treatment of pigs after weaning, 107 (2003) 129

Dietary fibre

Ileal and total tract digestibility, and protein and fat balance in pigs fed rice with addition of potato starch, sugar beet pulp or wheat bran, 102 (2002) 125

- Effect of type and level of fibre on gastric microbial activity and short-chain fatty acid concentrations in gestating sows, 104 (2003) 95
- Effects of lactic acid fermentation on wheat and barley carbohydrate composition and production performance in the chicken, 105 (2003) 135
- The effect of genotype and dietary fibre level on the caecal bacterial enzyme activity of young piglets: digestive consequences, 106 (2003) 119
- Effects of different sources and levels of dietary fibre in diets on performance, digesta characteristics and antibiotic treatment of pigs after weaning, 107 (2003) 129
- The effects of increasing levels of soluble non-starch polysaccharides and inclusion of feed enzymes in dog diets on faecal quality and digestibility, 108 (2003) 71
- A review of interactions between dietary fibre and the intestinal mucosa, and their consequences on digestive health in young non-ruminant animals, 108 (2003) 95
- Carbon balances for in vitro digestion and fermentation of potential roughages for pregnant sows, 110 (2003) 159
- Digesta passage**
- Effects of oilseed meal and grain-urea supplements fed infrequently on digestion in sheep. 1. Low quality grass hay diets, 110 (2003) 75
- Digesta retention**
- Tropical fibre sources for pigs—digestibility, digesta retention and estimation of fibre digestibility in vitro, 102 (2002) 109
- Digestibility**
- The effect of different moisture contents at ensiling on silo degradation and digestibility of structural carbohydrates of orchardgrass, 101 (2002) 127
- Tropical fibre sources for pigs—digestibility, digesta retention and estimation of fibre digestibility in vitro, 102 (2002) 109
- Effects of pH and fibrolytic enzymes on digestibility, bacterial protein synthesis, and fermentation in continuous culture, 102 (2002) 137
- Influence of prolonged adaptation periods on starch degradation in the digestive tract of dairy cows, 103 (2003) 15
- Prediction of the digestibility of the primary growth of grass silages harvested at different stages of maturity from chemical composition and pepsin-cellulase solubility, 103 (2003) 97
- Effect of expander processing on fractional rate of maize and barley starch degradation in the rumen of dairy cows estimated using rumen evacuation and in situ techniques, 104 (2003) 71
- Influence of naked barley cultivar with normal, amylose-rich or amylopectin-rich starch and enzyme supplementation on digestibility and piglet performance, 104 (2003) 121
- A qualitative and quantitative evaluation of the seaweed diet of North Ronaldsay sheep, 105 (2003) 21
- Nutritive value of *Ficus religiosa* in West African dwarf goats, 105 (2003) 71
- Whole tract and post ruminal digestibility determined by in situ ruminal, intestinal mobile nylon bag and whole tract nylon capsule methods, 106 (2003) 59
- The effect of genotype and dietary fibre level on the caecal bacterial enzyme activity of young piglets: digestive consequences, 106 (2003) 119
- The protein value of differently processed rapeseed solvent meal and cake assessed by in vitro methods and in tests with rats, 106 (2003) 175
- Evaluation of the variability in chemical composition and digestibility of different lupin (*Lupinus angustifolius*) kernel meals when fed to rainbow trout (*Oncorhynchus mykiss*), 107 (2003) 117
- Feeding value of wild Napier grass (*Pennisetum macrourum*) for cattle supplemented with protein and/or energy rich supplements, 108 (2003) 15
- Phosphorus availability of oilseed meals determined by the apparent faecal digestibility technique, 108 (2003) 43
- The effects of increasing levels of soluble non-starch polysaccharides and inclusion of feed enzymes in dog diets on faecal quality and digestibility, 108 (2003) 71
- The effects of added fructooligosaccharide (Raftilose® P95) and inulinase on faecal quality and digestibility in dogs, 108 (2003) 83
- Effects of astaxanthin-rich algal meal (*Haematococcus pluvalis*) on growth performance, caecal campylobacter and clostridial counts and tissue astaxanthin concentration of broiler chickens, 108 (2003) 119
- Rumen degradation and intestinal digestibility of rumen protected amino acids: comparison between in situ and in vitro data, 108 (2003) 223
- Digestion and passage kinetics of fibre in mature dairy heifers maintained on poor quality hay as affected by the source and level of nitrogen supplementation, 109 (2003) 19
- Evaluation of soyabean meal as a protein source in canine foods, 109 (2003) 121
- Prediction of the digestibility of primary growth and regrowth grass silages from chemical

composition, pepsin-cellulase solubility and indigestible cell wall content, 110 (2003) 61

Effects of inclusion with blue lupins (*Lupinus angustifolius*) in broiler diets and enzyme supplementation on production performance, digestibility and dietary AME content, 110 (2003) 185

Digestible amino acids

Stochastic true digestible amino acid values, 102 (2002) 225

Digestion

Effects of urea, isolated soybean protein and blood meal on growing steers fed a corn-based diet, 102 (2002) 3

Potential nutritional assessment of dwarf elephant grass (*Pennisetum purpureum* Schum. cv. Mott) by chemical composition, digestion and net portal flux of oxygen in cattle, 104 (2003) 29

Degradation in the rumen and nutritional value of lupin (*Lupinus albus* L.) seed proteins effect of extrusion, 105 (2003) 55

Rice straw degradation and biomass synthesis by rumen micro-organisms in continuous culture in response to ammonia treatment and legume extract supplementation, 105 (2003) 95

Use of fibrolytic enzymes to improve the nutritive value of ruminant diets. A biochemical and in vitro rumen degradation assessment, 107 (2003) 201

Estimating silage energy value and milk yield to rank corn hybrids, 109 (2003) 1

Effect of PEG and olive cake feed blocks supply on feed intake, digestion, and health of goats given kermes oak (*Quercus coccifera* L.) foliage, 110 (2003) 45

Effects of oilseed meals and grain-urea supplements fed infrequently on digestion in sheep. 2. Cereal straw diets, 110 (2003) 95

Digestion kinetics

FIBEX-treated rice straw as a feed ingredient for lactating dairy cows, 103 (2003) 41

Digestive tract

Post-ruminal phytate degradation in sheep, 101 (2002) 55

Chick adaptation to diets based on milling fractions of rye varying in arabinoxylans content, 101 (2002) 135

Disappearance kinetics

Impact of level of spontaneous heating during storage of bermudagrass hay on rumen in situ disappearance kinetics in steers, 108 (2003) 147

Dog

The replacement value of sorghum and maize with or without supplemental enzymes for rice in extruded dog foods, 108 (2003) 61

The effects of increasing levels of soluble non-starch polysaccharides and inclusion of feed enzymes in dog diets on faecal quality and digestibility, 108 (2003) 71

The effects of added fructooligosaccharide (Raftilose[®] P95) and inulinase on faecal quality and digestibility in dogs, 108 (2003) 83

Evaluation of soyabean meal as a protein source in canine foods, 109 (2003) 121

Dromedary

In vitro fermentation kinetics of some halophyte shrubs sampled at three stages of maturity, 104 (2003) 215

Drought feeding

Willow (*Salix* sp.) as a supplement for grazing cattle under drought conditions, 104 (2003) 1

Dry matter

In situ ruminal degradation of dry matter and fiber from bermudagrass fertilized with different nitrogen rates and harvested on two dates, 105 (2003) 185

Whole tract and post ruminal digestibility determined by in situ ruminal, intestinal mobile nylon bag and whole tract nylon capsule methods, 106 (2003) 59

The nutritive value of concentrate feedstuffs for ruminant animals. Part I: In situ ruminal degradability of dry matter and organic matter, 110 (2003) 111

D-value

Prediction of the digestibility of the primary growth of grass silages harvested at different stages of maturity from chemical composition and pepsin-cellulase solubility, 103 (2003) 97

E

***E. coli* O157:H7**

Effects of a *Saccharomyces cerevisiae* feed supplement on *Escherichia coli* O157:H7 in ruminal fluid in vitro, 104 (2003) 179

Emulsifier

Endogenous lipolysis in feedstuffs and compound feeds for pigs: effects of storage time and conditions and lipase and/or emulsifier addition, 102 (2002) 53

Endogenous nitrogen flows

The enzyme hydrolysed protein method for the determination of endogenous ileal nitrogen and amino acid flows—a modification, 108 (2003) 207

Endogenous phytase

Phytate degradation in soaked and fermented liquid feed—effect of diet, time of soaking, heat treatment, phytase activity, pH and temperature, 103 (2003) 141

Energy

Estimating silage energy value and milk yield to rank corn hybrids, 109 (2003) 1

Energy supplement

Effect of feeding an energy supplement prepartum and postpartum on milk yield and composition, and incidence of ketosis in dairy cows, 105 (2003) 81

Ensiling

The effect of different moisture contents at ensiling on silo degradation and digestibility of structural carbohydrates of orchardgrass, 101 (2002) 127

Enterolobium cyclocarpum

Saponin rich tropical fruits affect fermentation and methanogenesis in faunated and defaunated rumen fluid, 109 (2003) 79

Enzyme

Performance of dairy cows fed forage treated with fibrolytic enzymes prior to feeding, 101 (2002) 115

Influence of naked barley cultivar with normal, amylose-rich or amylopectin-rich starch and enzyme supplementation on digestibility and piglet performance, 104 (2003) 121

Use of triticale alone and in combination with wheat or maize: effects of diet type and enzyme supplementation on hen performance, egg quality, organ weights, intestinal viscosity and digestive system characteristics, 105 (2003) 149

Use of fibrolytic enzymes to improve the nutritive value of ruminant diets. A biochemical and in vitro rumen degradation assessment, 107 (2003) 201

The effects of increasing levels of soluble non-starch polysaccharides and inclusion of feed enzymes in dog diets on faecal quality and digestibility, 108 (2003) 71

Enzyme addition

Effects of inclusion with blue lupins (*Lupinus angustifolius*) in broiler diets and enzyme supplementation on production performance, digestibility and dietary AME content, 110 (2003) 185

Enzyme hydrolysed protein

The enzyme hydrolysed protein method for the determination of endogenous ileal nitrogen and amino acid flows—a modification, 108 (2003) 207

Enzyme supplementation

The replacement value of sorghum and maize with or without supplemental enzymes for rice in extruded dog foods, 108 (2003) 61

EPA

Fish oil metabolism in ruminants. III. Transfer of *n*-3 polyunsaturated fatty acids (PUFA) from tuna oil into sheep's milk, 108 (2003) 1

Epithelium

A review of interactions between dietary fibre and the intestinal mucosa, and their consequences on digestive health in young non-ruminant animals, 108 (2003) 95

Essential amino acids

Amino acid composition of processed fish silage using different raw materials, 105 (2003) 199

Evaluation

In vitro and in situ evaluation of selected multi-purpose trees, wheat bran and *Lablab purpureus* as potential feed supplements to tef (*Eragrostis tef*) straw, 108 (2003) 159

Evaluation methods

Comparison among methods of nutritional evaluation of dietary ingredients for rabbits, 109 (2003) 195

Ewe

Rumen digesta kinetics in cold exposed prolific sheep: impact on protein evaluation, 101 (2002) 17

Extrusion

Degradation in the rumen and nutritional value of lupin (*Lupinus albus* L.) seed proteins effect of extrusion, 105 (2003) 55

F**Faecal quality**

The replacement value of sorghum and maize with or without supplemental enzymes for rice in extruded dog foods, 108 (2003) 61

Faeces

The effects of added fructooligosaccharide (Raftilose® P95) and inulinase on faecal quality and digestibility in dogs, 108 (2003) 83

Fat digestion

Fat nutrition and metabolism in piglets: a review, 109 (2003) 151

Fat extraction

Comparison of the fatty acid composition of fresh and ensiled perennial ryegrass (*Lolium perenne* L.), affected by cultivar and regrowth interval, 108 (2003) 191

Fat metabolism

Fat nutrition and metabolism in piglets: a review, 109 (2003) 151

Fat nutrition

Fat nutrition and metabolism in piglets: a review, 109 (2003) 151

Fat stability

Endogenous lipolysis in feedstuffs and compound feeds for pigs: effects of storage time and conditions and lipase and/or emulsifier addition, 102 (2002) 53

Fatty acids

Effect of dietary animal fat and methionine on dairy ewes milk yield and milk composition, 105 (2003) 43

Fish oil metabolism in ruminants. III. Transfer of *n*-3 polyunsaturated fatty acids (PUFA) from tuna oil into sheep's milk, 108 (2003) 1

Effect of feeding calcium salts of long-chain fatty acids, from palm fatty acid distillate or soybean oil, to high producing dairy cows on milk yield and composition, and on selected blood and reproductive parameters, 108 (2003) 25

Comparison of the fatty acid composition of fresh and ensiled perennial ryegrass (*Lolium perenne* L.), affected by cultivar and regrowth interval, 108 (2003) 191

Partially or totally replacing soybean meal and maize by chickpeas in lamb diets: intramuscular fatty acid composition, 108 (2003) 215

Feed

Endogenous lipolysis in feedstuffs and compound feeds for pigs: effects of storage time and conditions and lipase and/or emulsifier addition, 102 (2002) 53

Evaluation of several potential bioactive agents for reducing protozoal activity in vitro, 105 (2003) 163

Feed blocks

Effect of PEG and olive cake feed blocks supply on feed intake, digestion, and health of goats given kermes oak (*Quercus coccifera* L.) foliage, 110 (2003) 45

Feed degradation

Effects of dry plant extracts on feed degradation and the production of rumen microbial biomass in a dual outflow fermenter, 101 (2002) 183

Feed processing

Endogenous lipolysis in feedstuffs and compound feeds for pigs: effects of storage time and conditions and lipase and/or emulsifier addition, 102 (2002) 53

Feed:gain ratio

Effects of lactic acid fermentation on wheat and barley carbohydrate composition and production performance in the chicken, 105 (2003) 135

Feeding value

Merit of *Gleditsia triacanthos* pods in animal feeding. Chemical composition and nutritional evaluation, 107 (2003) 151

Feedstuffs

Influence of feeding various phosphorus sources on apparent digestibility of phosphorus in dairy cows, 109 (2003) 95

Fermentation

The influence of fermented putak on diet digestibility and growth performance of weanling pigs, 102 (2002) 217

The fermentation of soybean meal by rumen microbes *in vitro* reveals different kinetic features for the inactivation and the degradation of trypsin inhibitor protein, 106 (2003) 189

Effects of different sources and levels of dietary fibre in diets on performance, digesta characteristics and antibiotic treatment of pigs after weaning, 107 (2003) 129

Effects of dietary oligosaccharides on microbial diversity and fructo-oligosaccharide degrading bacteria in faeces of piglets post-weaning, 109 (2003) 133

Fermentation pattern

Fish oils as potent rumen methane inhibitors and associated effects on rumen fermentation *in vitro* and *in vivo*, 104 (2003) 41

Fermentation quality

Ensiling forage garland (*Chrysanthemum coronarium* L.) at two stages of maturity and at different wilting levels, 108 (2003) 181

Fermented silage

Amino acid composition of processed fish silage using different raw materials, 105 (2003) 199

Fiber

Performance of dairy cows fed forage treated with fibrolytic enzymes prior to feeding, 101 (2002) 115

FIBEX-treated rice straw as a feed ingredient for lactating dairy cows, 103 (2003) 41

Fibre digestibility

Identification of lucerne stem cell wall traits related to *in vitro* neutral detergent fibre digestibility, 110 (2003) 17

Fibrolytic enzyme activity

Effects of urea infused into the rumen on liquid- and particle-associated fibrolytic enzyme activities in steers fed low quality grass hay, 104 (2003) 13

Effect of mastication on degradation of orchard-grass hay stem by rumen microbes: fibrolytic enzyme activities and microbial attachment, 106 (2003) 69

Fibrolytic enzymes

Effects of pH and fibrolytic enzymes on digestibility, bacterial protein synthesis, and fermentation in continuous culture, 102 (2002) 137

Ficus religiosa

Nutritive value of *Ficus religiosa* in West African dwarf goats, 105 (2003) 71

Fish meal

Use of sunflower meal or fish meal as protein supplement for high quality fresh forage diets: ruminal fermentation, microbial protein synthesis and sites of digestion, 101 (2002) 61

Effect of heat processing of protein sources on the disappearance of their selenium from mobile bags in the digestive tract of dairy cows, 107 (2003) 15

Changes in the levels of histamine during processing and storage of fish meal, 107 (2003) 161

Fish nutrition

Evaluation of the variability in chemical composition and digestibility of different lupin (*Lupinus angustifolius*) kernel meals when fed to rainbow trout (*Oncorhynchus mykiss*), 107 (2003) 117

Fish oil

Fish oils as potent rumen methane inhibitors and associated effects on rumen fermentation *in vitro* and *in vivo*, 104 (2003) 41

Fish silages

Amino acid composition of processed fish silage using different raw materials, 105 (2003) 199

Flour

Chick adaptation to diets based on milling fractions of rye varying in arabinoxylans content, 101 (2002) 135

Fodder trees

Evaluation of the use of *Buddleia skutchii* tree leaves and Kikuyu (*Pennisetum clandestinum*) grass hay in sheep feeding, 106 (2003) 209

Forage

Performance of dairy cows fed forage treated with fibrolytic enzymes prior to feeding, 101 (2002) 115

Changes in chemical composition and nutritive value of urea treated whole crop wheat during exposure to air, 102 (2002) 181

Effect of a wide range in the ratio of supplemental rumen degradable protein to starch on utilization of low-quality, grass hay by beef steers, 105 (2003) 5

Forage legumes

Ameliorating the toxic effects of *Acacia angustissima* with polyethylene glycol in rats, 106 (2003) 165

Forage maize

Prediction of the quality of forage maize by near-infrared reflectance spectroscopy, 109 (2003) 183

Forage quality

Prediction of the quality of forage maize by near-infrared reflectance spectroscopy, 109 (2003) 183

Formaldehyde treatment

Phosphorus availability of oilseed meals determined by the apparent faecal digestibility technique, 108 (2003) 43

Fractional outflow rate

Effect of expander processing on fractional rate of maize and barley starch degradation in the rumen of dairy cows estimated using rumen evacuation and in situ techniques, 104 (2003) 71

Freeze drying

Effect of preparation method on composition and NIR spectra of forage samples, 107 (2003) 191

Freezing

The effect of freezing and thawing on grass silage quality predictions based on near infrared reflectance spectroscopy, 102 (2002) 151

Fresh forage

Use of sunflower meal or fish meal as protein supplement for high quality fresh forage diets: ruminal fermentation, microbial protein synthesis and sites of digestion, 101 (2002) 61

Fructooligosaccharides

The effects of added fructooligosaccharide (Raftilose® P95) and inulinase on faecal quality and digestibility in dogs, 108 (2003) 83

G

Gas production

Relationships between patterns of rumen fermentation measured in sheep and in situ degradability

and the in vitro gas production profile of the diet, 101 (2002) 31

A mixture simplex design to study associative effects with an in vitro gas production technique, 101 (2002) 191

Microbial caecal fermentation in Iberic or Landrace pigs given acorn/sorghum or maize diets estimated in vitro using the gas production technique, 102 (2002) 93

In vitro fermentation kinetics of some halophyte shrubs sampled at three stages of maturity, 104 (2003) 215

In vitro gas production as a method to compare fermentation characteristics of steam-flaked corn, 105 (2003) 109

Effect of different doses of quebracho tannins extract on rumen fermentation in ewes, 109 (2003) 65

Gas production technique

Carbon balances for in vitro digestion and fermentation of potential roughages for pregnant sows, 110 (2003) 159

Genotype

The effect of genotype and dietary fibre level on the caecal bacterial enzyme activity of young piglets: digestive consequences, 106 (2003) 119

Gestating sows

Effect of type and level of fibre on gastric microbial activity and short-chain fatty acid concentrations in gestating sows, 104 (2003) 95

Gleditsia triacanthos

Merit of *Gleditsia triacanthos* pods in animal feeding. Chemical composition and nutritional evaluation, 107 (2003) 151

Glucanase

Effects of glucanase inclusion in a de-hulled barley diet on the growth performance and nutrient digestion of broiler chickens, 102 (2002) 35

Goats

Nutritive value of *Ficus religiosa* in West African dwarf goats, 105 (2003) 71

Effect of low levels of dietary cobalt on apparent nutrient digestibility in Omani goats, 109 (2003) 209

Effect of PEG and olive cake feed blocks supply on feed intake, digestion, and health of goats given kermes oak (*Quercus coccifera* L.) foliage, 110 (2003) 45

Grass cultivars

Comparison of the fatty acid composition of fresh and ensiled perennial ryegrass (*Lolium perenne* L.), affected by cultivar and regrowth interval, 108 (2003) 191

Grass hay

Effects of urea infused into the rumen on liquid- and particle-associated fibrolytic enzyme activities in steers fed low quality grass hay, 104 (2003) 13

Grass hay stem

Effect of mastication on degradation of orchard-grass hay stem by rumen microbes: fibrolytic enzyme activities and microbial attachment, 106 (2003) 69

Grass silage

Prediction of the digestibility of the primary growth of grass silages harvested at different stages of maturity from chemical composition and pepsin-cellulase solubility, 103 (2003) 97

Prediction of the digestibility of primary growth and regrowth grass silages from chemical composition, pepsin-cellulase solubility and indigestible cell wall content, 110 (2003) 61

Grass silage quality

The effect of freezing and thawing on grass silage quality predictions based on near infrared reflectance spectroscopy, 102 (2002) 151

Gravid does

Response of gravid does to partial replacement of dietary protein by a leaf meal mixture of *Leucaena leucocephala*, *Morus alba* and *Azadirachta indica*, 109 (2003) 171

Green plants

Tropical fibre sources for pigs—digestibility, digesta retention and estimation of fibre digestibility in vitro, 102 (2002) 109

Growing pigs

Tropical fibre sources for pigs—digestibility, digesta retention and estimation of fibre digestibility in vitro, 102 (2002) 109

Growth

Nutrient utilization and growth performance of defaunated and faunated lambs maintained on complete diets containing varying proportion of roughage and concentrate, 101 (2002) 87

Effect of cold process monensin enriched urea molasses mineral blocks on performance of crossbred calves fed a wheat straw based diet, 103 (2003) 51

Influence of naked barley cultivar with normal, amylose-rich or amylopectin-rich starch and enzyme supplementation on digestibility and piglet performance, 104 (2003) 121

Effect of dietary protein level on growth, survival, feed utilisation and body composition of hybrid *Clarias* catfish (*Clarias batrachus* × *Clarias gariepinus*), 104 (2003) 169

Effects of oilseed meal and grain-urea supplements fed infrequently on digestion in sheep. 1. Low quality grass hay diets, 110 (2003) 75

Effects of oilseed meals and grain-urea supplements fed infrequently on digestion in sheep. 2. Cereal straw diets, 110 (2003) 95

Growth performance

Effect of polyethylene glycol-6000 on nutrient intake, digestion and growth of kids browsing *Prosopis cineraria*, 101 (2002) 45

Effects of glucanase inclusion in a de-hulled barley diet on the growth performance and nutrient digestion of broiler chickens, 102 (2002) 35

Addition of β -ionone to the diet fails to affect growth performance in female broiler chickens, 106 (2003) 219

H

Halophyte

In vitro fermentation kinetics of some halophyte shrubs sampled at three stages of maturity, 104 (2003) 215

Hays

NDF degradability of hays measured in situ and in vitro, 104 (2003) 201

Health

Usefulness of ionophores for lactating dairy cows: a review, 106 (2003) 39

Heat treatment

Effect of expander processing on fractional rate of maize and barley starch degradation in the rumen of dairy cows estimated using rumen evacuation and in situ techniques, 104 (2003) 71

In situ digestibility of starch in barley grain (*Hordeum vulgare*) and peas (*Pisum sativum* L.) in dairy cows: influence of heat treatment and glucose addition, 107 (2003) 105

Heating-degree days

Impact of level of spontaneous heating during storage of bermudagrass hay on rumen in situ disappearance kinetics in steers, 108 (2003) 147

Hematological parameters

Effects of urea and sulfur on performance of faunate and defaunate Ramlic lambs, and some rumen and blood parameters, 109 (2003) 35

Hemicellulose

Identification of lucerne stem cell wall traits related to in vitro neutral detergent fibre digestibility, 110 (2003) 17

Histamine

Changes in the levels of histamine during processing and storage of fish meal, 107 (2003) 161

Humidity effect

Changes in the levels of histamine during processing and storage of fish meal, 107 (2003) 161

Hybrid catfish

Effect of dietary protein level on growth, survival, feed utilisation and body composition of hybrid *Clarias* catfish (*Clarias batrachus* × *Clarias gariepinus*), 104 (2003) 169

I

Iberic breed

Microbial caecal fermentation in Iberic or Landrace pigs given acorn/sorghum or maize diets estimated in vitro using the gas production technique, 102 (2002) 93

Ileum

The use of a model ileum to investigate the effects of novel and existing antimicrobials on indigenous porcine gastrointestinal microflora: using vancomycin as an example, 103 (2003) 123

Immune function

Effects of copper source and concentration on copper status and immune function in growing and finishing steers, 110 (2003) 31

In situ

Rumen degradation characteristics of nutrients in maize silages and evaluation of laboratory measurements and NIRS as predictors, 101 (2002) 73

NDF degradability of hays measured in situ and in vitro, 104 (2003) 201

In situ ruminal degradation of dry matter and fiber from bermudagrass fertilized with different nitrogen rates and harvested on two dates, 105 (2003) 185

Effect of heat processing of protein sources on the disappearance of their selenium from mobile bags in the digestive tract of dairy cows, 107 (2003) 15

Impact of level of spontaneous heating during storage of bermudagrass hay on rumen in situ disappearance kinetics in steers, 108 (2003) 147

In vitro and in situ evaluation of selected multi-purpose trees, wheat bran and *Lablab purpureus* as potential feed supplements to tef (*Eragrostis tef*) straw, 108 (2003) 159

Rumen degradation and intestinal digestibility of rumen protected amino acids: comparison between in situ and in vitro data, 108 (2003) 223

In situ degradation

Effect of different doses of quebracho tannins extract on rumen fermentation in ewes, 109 (2003) 65

In situ NDF disappearance

Effect of mastication on degradation of orchard-grass hay stem by rumen microbes: fibrolytic enzyme activities and microbial attachment, 106 (2003) 69

In situ rumen degradability

Ruminal degradability and in vitro intestinal digestibility of sunflower meal and in vitro digestibility of olive by-products supplemented with urea or sunflower meal. Comparison between goats and sheep, 110 (2003) 3

In situ ruminal degradability

The nutritive value of concentrate feedstuffs for ruminant animals. Part I: In situ ruminal degradability of dry matter and organic matter, 110 (2003) 111

The nutritive value of concentrate feedstuffs for ruminant animals. Part II: In situ ruminal degradability of crude protein, 110 (2003) 131

In situ technique

Quantitative review of in situ starch degradation in the rumen, 106 (2003) 81

In vitro

Tropical fibre sources for pigs—digestibility, digesta retention and estimation of fibre digestibility in vitro, 102 (2002) 109

Prediction of the digestibility of the primary growth of grass silages harvested at different stages of maturity from chemical composition and pepsin-cellulase solubility, 103 (2003) 97

NDF degradability of hays measured in situ and in vitro, 104 (2003) 201

Rice straw degradation and biomass synthesis by rumen micro-organisms in continuous culture in response to ammonia treatment and legume extract supplementation, 105 (2003) 95

In vitro gas production as a method to compare fermentation characteristics of steam-flaked corn, 105 (2003) 109

Rumen degradation characteristics of nutrients in compound feeds and the evaluation of tables, laboratory methods and NIRS as predictors, 107 (2003) 29

Use of fibrolytic enzymes to improve the nutritive value of ruminant diets. A biochemical and in vitro rumen degradation assessment, 107 (2003) 201

In vitro and in situ evaluation of selected multi-purpose trees, wheat bran and *Lublab purpureus* as potential feed supplements to tef (*Eragrostis tef*) straw, 108 (2003) 159

Rumen degradation and intestinal digestibility of rumen protected amino acids: comparison between in situ and in vitro data, 108 (2003) 223

In vitro digestibility

Chemical composition and nutrients availability for goats and sheep of two-stage olive cake and olive leaves, 107 (2003) 61

Ruminal degradability and in vitro intestinal digestibility of sunflower meal and in vitro digestibility of olive by-products supplemented with urea or sunflower meal. Comparison between goats and sheep, 110 (2003) 3

In vitro gas production

Gas production from straw incubated in vitro with different levels of purified carbohydrates, 101 (2002) 1

Laboratory variation of 24 h in vitro gas production and estimated metabolizable energy values of ruminant feeds, 102 (2002) 169

In vitro simulation model

The use of a model ileum to investigate the effects of novel and existing antimicrobials on indigenous porcine gastrointestinal microflora: using vancomycin as an example, 103 (2003) 123

In vivo

Prediction of the digestibility of the primary growth of grass silages harvested at different stages of maturity from chemical composition and pepsin-cellulase solubility, 103 (2003) 97

Effect of expander processing on fractional rate of maize and barley starch degradation in the rumen of dairy cows estimated using rumen evacuation and in situ techniques, 104 (2003) 71

Indigestible neutral detergent fibre

Prediction of the digestibility of primary growth and regrowth grass silages from chemical composition, pepsin-cellulase solubility and indigestible cell wall content, 110 (2003) 61

Ingredients

Comparison among methods of nutritional evaluation of dietary ingredients for rabbits, 109 (2003) 195

Intake

Feeding value of wild Napier grass (*Pennisetum macrourum*) for cattle supplemented with protein and/or energy rich supplements, 108 (2003) 15

Digestion and passage kinetics of fibre in mature dairy heifers maintained on poor quality hay as affected by the source and level of nitrogen supplementation, 109 (2003) 19

Intestinal colonization

Effects of astaxanthin-rich algal meal (*Haematococcus pluvalis*) on growth performance, caecal campylobacter and clostridial counts and tissue astaxanthin concentration of broiler chickens, 108 (2003) 119

Intestinal enzyme

Effect of dietary protein level on growth, survival, feed utilisation and body composition of hybrid *Clarias* catfish (*Clarias batrachus* × *Clarias gariepinus*), 104 (2003) 169

Intestinal indigestibility

In situ digestibility of protein in barley grain (*Hordeum vulgare*) and peas (*Pisum sativum* L.) in dairy cows: influence of heat treatment and glucose addition, 107 (2003) 87

In situ digestibility of starch in barley grain (*Hordeum vulgare*) and peas (*Pisum sativum* L.) in dairy cows: influence of heat treatment and glucose addition, 107 (2003) 105

Intra- and inter-laboratory

Laboratory variation of 24 h in vitro gas production and estimated metabolizable energy values of ruminant feeds, 102 (2002) 169

Inulinase

The effects of added fructooligosaccharide (Raftilose[®] P95) and inulinase on faecal quality and digestibility in dogs, 108 (2003) 83

β -Ionone

Addition of β -ionone to the diet fails to affect growth performance in female broiler chickens, 106 (2003) 219

Ionophore

Effect of cold process monensin enriched urea molasses mineral blocks on performance of crossbred calves fed a wheat straw based diet, 103 (2003) 51

Evaluation of several potential bioactive agents for reducing protozoal activity in vitro, 105 (2003) 163

IOP

Usefulness of ionophores for lactating dairy cows: a review, 106 (2003) 39

Isoleucine

Effect of excess leucine in low protein diet on ketosis in 3-week-old male broiler chicks fed different levels of isoleucine and valine, 103 (2003) 171

K

Kermes oak

Effect of PEG and olive cake feed blocks supply on feed intake, digestion, and health of goats given kermes oak (*Quercus coccifera* L.) foliage, 110 (2003) 45

Ketosis

Effect of excess leucine in low protein diet on ketosis in 3-week-old male broiler chicks fed

different levels of isoleucine and valine, 103 (2003) 171

Effect of feeding an energy supplement prepartum and postpartum on milk yield and composition, and incidence of ketosis in dairy cows, 105 (2003) 81

Kids

Effect of polyethylene glycol-6000 on nutrient intake, digestion and growth of kids browsing *Prosopis cineraria*, 101 (2002) 45

Kikuyu hay

Evaluation of the use of *Buddleia skutchii* tree leaves and Kikuyu (*Pennisetum clandestinum*) grass hay in sheep feeding, 106 (2003) 209

Klason lignin

Identification of lucerne stem cell wall traits related to in vitro neutral detergent fibre digestibility, 110 (2003) 17

L

Lactating cows

Soybean hulls as a replacement of forage neutral detergent fiber in total mixed rations of lactating cows, 106 (2003) 21

Lactic acid fermentation

Effects of lactic acid fermentation on wheat and barley carbohydrate composition and production performance in the chicken, 105 (2003) 135

Lambs

Nutrient utilization and growth performance of defaunated and faunated lambs maintained on complete diets containing varying proportion of roughage and concentrate, 101 (2002) 87

Rumen fermentation patterns and nutrient digestion in lambs fed cottonseed meal supplemental diets, 103 (2003) 1

Larva

Nutritive value of house fly (*Musca domestica*) larvae as a feed supplement for turkey poults, 105 (2003) 225

Layer

Requirement of calcium for commercial broilers and white leghorn layers at low dietary phosphorus levels, 106 (2003) 199

Laying hen

Use of triticale alone and in combination with wheat or maize: effects of diet type and enzyme supplementation on hen performance, egg quality, organ weights, intestinal viscosity and digestive system characteristics, 105 (2003) 149

The effect of dietary supplementation with trivalent chromium on production performance of laying hens and the chromium content in the yolk, 106 (2003) 149

Leaf meal mixture

Response of gravid does to partial replacement of dietary protein by a leaf meal mixture of *Leucaena leucocephala*, *Morus alba* and *Azadirachta indica*, 109 (2003) 171

Leucaena leucocephala

Effect of *Leucaena leucocephala* leaf meal treated with acetic acid or sodium hydroxide on apparent digestibility and nitrogen retention in pig diets, 101 (2002) 151

A mixture simplex design to study associative effects with an in vitro gas production technique, 101 (2002) 191

Leucine

Effect of excess leucine in low protein diet on ketosis in 3-week-old male broiler chicks fed different levels of isoleucine and valine, 103 (2003) 171

Lignin

Efficacy of plant extracts rich in secondary constituents to modify rumen fermentation, 101 (2002) 101

Lipase

Endogenous lipolysis in feedstuffs and compound feeds for pigs: effects of storage time and conditions and lipase and/or emulsifier addition, 102 (2002) 53

Lipolysis

Endogenous lipolysis in feedstuffs and compound feeds for pigs: effects of storage time and conditions and lipase and/or emulsifier addition, 102 (2002) 53

Fish oils as potent rumen methane inhibitors and associated effects on rumen fermentation in vitro and in vivo, 104 (2003) 41

Low quality hay

Digestion and passage kinetics of fibre in mature dairy heifers maintained on poor quality hay as affected by the source and level of nitrogen supplementation, 109 (2003) 19

Lucerne

Identification of lucerne stem cell wall traits related to in vitro neutral detergent fibre digestibility, 110 (2003) 17

Lupin

Degradation in the rumen and nutritional value of lupin (*Lupinus albus* L.) seed proteins effect of extrusion, 105 (2003) 55

Evaluation of the variability in chemical composition and digestibility of different lupin (*Lupinus angustifolius*) kernel meals when fed to rainbow trout (*Oncorhynchus mykiss*), 107 (2003) 117

Effects of inclusion with blue lupins (*Lupinus angustifolius*) in broiler diets and enzyme supplementation on production performance, digestibility and dietary AME content, 110 (2003) 185

Lysiloma latisiliquum

A mixture simplex design to study associative effects with an in vitro gas production technique, 101 (2002) 191

Lysine

Rumen degradation and intestinal digestibility of rumen protected amino acids: comparison between in situ and in vitro data, 108 (2003) 223

M**Macrophyte**

A qualitative and quantitative evaluation of the seaweed diet of North Ronaldsay sheep, 105 (2003) 21

Magnesium

Effects of source and level of magnesium and Vitamin E on prevention of hepatic peroxidation and oxidative deterioration of broiler meat, 107 (2003) 143

Maize

The replacement value of sorghum and maize with or without supplemental enzymes for rice in extruded dog foods, 108 (2003) 61

Maize silage

Rumen degradation characteristics of nutrients in maize silages and evaluation of laboratory measurements and NIRS as predictors, 101 (2002) 73
Levels of biogenic amines in maize silages, 102 (2002) 197

Maturity

Nutritive value of whole crop wheat silage harvested at three stages of maturity, 103 (2003) 85

Metabolic profile

Effect of PEG and olive cake feed blocks supply on feed intake, digestion, and health of goats given kermes oak (*Quercus coccifera* L.) foliage, 110 (2003) 45

Metabolizable energy

Laboratory variation of 24 h in vitro gas production and estimated metabolizable energy values of ruminant feeds, 102 (2002) 169
Effects of oilseed meal and grain-urea supplements fed infrequently on digestion in sheep. 1. Low quality grass hay diets, 110 (2003) 75
Effects of oilseed meals and grain-urea supplements fed infrequently on digestion in sheep. 2. Cereal straw diets, 110 (2003) 95

Metallothionein

Relative bioavailability of organic zinc sources based on tissue zinc and metallothionein in chicks fed conventional dietary zinc concentrations, 101 (2002) 161

Methane

Efficacy of plant extracts rich in secondary constituents to modify rumen fermentation, 101 (2002) 101
Fish oils as potent rumen methane inhibitors and associated effects on rumen fermentation in vitro and in vivo, 104 (2003) 41
Saponin rich tropical fruits affect fermentation and methanogenesis in faunated and defaunated rumen fluid, 109 (2003) 79

Methionine

Effect of dietary animal fat and methionine on dairy ewes milk yield and milk composition, 105 (2003) 43

Rumen degradation and intestinal digestibility of rumen protected amino acids: comparison between in situ and in vitro data, 108 (2003) 223

Methionine hydroxy analog

Effect of feeding methionine supplements with different rumen escape values on performance of high producing dairy cows in early lactation, 107 (2003) 1

Microbial

A new method to estimate microbial nitrogen escape from the rumen of the dairy cow, 101 (2002) 201

Microbial phytase

Phytate degradation in soaked and fermented liquid feed—effect of diet, time of soaking, heat treatment, phytase activity, pH and temperature, 103 (2003) 141
Additivity of the effect of cereal and microbial phytases on apparent phosphorus absorption in growing pigs fed diets with marginal P supply, 104 (2003) 143

Microbial protein

Effect of increasing availability of water-soluble carbohydrates on in vitro rumen fermentation, 104 (2003) 59
Urinary purine derivative excretion in swamp buffaloes after duodenal purine base infusion, 104 (2003) 191

Microbial protein synthesis

Purine excretion and estimated microbial protein yield in sheep fed diets differing in protein degradability, 105 (2003) 123

Microflora

Effect of type and level of fibre on gastric microbial activity and short-chain fatty acid concentrations in gestating sows, 104 (2003) 95

Microorganism

Effects of dry plant extracts on feed degradation and the production of rumen microbial biomass in a dual outflow fermenter, 101 (2002) 183

Milk

Performance of dairy cows fed forage treated with fibrolytic enzymes prior to feeding, 101 (2002) 115
FIBEX-treated rice straw as a feed ingredient for lactating dairy cows, 103 (2003) 41

Milk composition

- FIBEX-treated rice straw as a feed ingredient for lactating dairy cows, 103 (2003) 41
- Effect of dietary animal fat and methionine on dairy ewes milk yield and milk composition, 105 (2003) 43

Milk fat

- Dietary canola or soybean oil with two levels of conjugated linoleic acids (CLA) alter profiles of 18:1 and 18:2 isomers in blood plasma and milk fat from dairy cows, 103 (2003) 63
- Soybean hulls as a replacement of forage neutral detergent fiber in total mixed rations of lactating cows, 106 (2003) 21

Milk fatty acids

- Soybean hulls as a replacement of forage neutral detergent fiber in total mixed rations of lactating cows, 106 (2003) 21

Milk yield

- Effect of feeding an energy supplement prepartum and postpartum on milk yield and composition, and incidence of ketosis in dairy cows, 105 (2003) 81
- Soybean hulls as a replacement of forage neutral detergent fiber in total mixed rations of lactating cows, 106 (2003) 21
- Effect of feeding methionine supplements with different rumen escape values on performance of high producing dairy cows in early lactation, 107 (2003) 1
- Fish oil metabolism in ruminants. III. Transfer of *n*-3 polyunsaturated fatty acids (PUFA) from tuna oil into sheep's milk, 108 (2003) 1
- Feeding value of wild Napier grass (*Pennisetum macrochloa*) for cattle supplemented with protein and/or energy rich supplements, 108 (2003) 15
- Effect of feeding calcium salts of long-chain fatty acids, from palm fatty acid distillate or soybean oil, to high producing dairy cows on milk yield and composition, and on selected blood and reproductive parameters, 108 (2003) 25

Mill

- In vitro gas production as a method to compare fermentation characteristics of steam-flaked corn, 105 (2003) 109

Mineral retention

- The effect of citric acid and microbial phytase on mineral utilization in broiler chicks, 110 (2003) 201

Mixed-linked (1→3)(1→4)- β -glucans

- Effects of lactic acid fermentation on wheat and barley carbohydrate composition and production performance in the chicken, 105 (2003) 135

Mixture simplex design

- A mixture simplex design to study associative effects with an in vitro gas production technique, 101 (2002) 191

Mobile bags

- Effect of heat processing of protein sources on the disappearance of their selenium from mobile bags in the digestive tract of dairy cows, 107 (2003) 15

Mobile nylon bag

- Whole tract and post ruminal digestibility determined by in situ ruminal, intestinal mobile nylon bag and whole tract nylon capsule methods, 106 (2003) 59
- The nutritive value of concentrate feedstuffs for ruminant animals. Part III. Small intestinal digestibility as measured by in vitro or mobile bag techniques, 110 (2003) 145

Molasses

- Effects of processing factors on in vitro ammonia release from cooked molasses blocks containing urea, 107 (2003) 173

Monensin

- Effect of cold process monensin enriched urea molasses mineral blocks on performance of crossbred calves fed a wheat straw based diet, 103 (2003) 51
- Usefulness of ionophores for lactating dairy cows: a review, 106 (2003) 39

Mould growth

- Changes in the levels of histamine during processing and storage of fish meal, 107 (2003) 161

Mucus/mucin

- A review of interactions between dietary fibre and the intestinal mucosa, and their consequences on digestive health in young non-ruminant animals, 108 (2003) 95

Multipurpose trees

- In vitro and in situ evaluation of selected multipurpose trees, wheat bran and *Lablab purpureus* as potential feed supplements to tef (*Eragrostis tef*) straw, 108 (2003) 159

Musca domestica

- Nutritive value of house fly (*Musca domestica*) larvae as a feed supplement for turkey poults, 105 (2003) 225

N**N**

- Impact of level of spontaneous heating during storage of bermudagrass hay on rumen in situ disappearance kinetics in steers, 108 (2003) 147

N utilization

- Nutritive value of *Ficus religiosa* in West African dwarf goats, 105 (2003) 71

Napier

- Feeding value of wild Napier grass (*Pennisetum macrourum*) for cattle supplemented with protein and/or energy rich supplements, 108 (2003) 15

NDF

- NDF degradability of hays measured in situ and in vitro, 104 (2003) 201

- Impact of level of spontaneous heating during storage of bermudagrass hay on rumen in situ disappearance kinetics in steers, 108 (2003) 147

NDF kinetics

- Digestion and passage kinetics of fibre in mature dairy heifers maintained on poor quality hay as affected by the source and level of nitrogen supplementation, 109 (2003) 19

NDIN

- Impact of level of spontaneous heating during storage of bermudagrass hay on rumen in situ disappearance kinetics in steers, 108 (2003) 147

Near infrared reflectance spectroscopy

- The effect of freezing and thawing on grass silage quality predictions based on near infrared reflectance spectroscopy, 102 (2002) 151

- Prediction of chemical composition, nutritive value and ingredient composition of European compound feeds for rabbits by near infrared reflectance spectroscopy (NIRS), 104 (2003) 153

- Prediction of the quality of forage maize by near-infrared reflectance spectroscopy, 109 (2003) 183

Net energy

- Prediction of the quality of forage maize by near-infrared reflectance spectroscopy, 109 (2003) 183

Neutral detergent fiber

- In situ ruminal degradation of dry matter and fiber from bermudagrass fertilized with different nitrogen rates and harvested on two dates, 105 (2003) 185

- Estimating silage energy value and milk yield to rank corn hybrids, 109 (2003) 1

Ninhydrin

- Effects of several protein supplements on flow of soluble non-ammonia nitrogen from the forestomach and milk production in dairy cows, 102 (2002) 15

NIR spectra

- Effect of preparation method on composition and NIR spectra of forage samples, 107 (2003) 191

NIRS

- Rumen degradation characteristics of nutrients in maize silages and evaluation of laboratory measurements and NIRS as predictors, 101 (2002) 73

- Rumen degradation characteristics of nutrients in compound feeds and the evaluation of tables, laboratory methods and NIRS as predictors, 107 (2003) 29

Nitrogen balance

- Effects of urea, isolated soybean protein and blood meal on growing steers fed a corn-based diet, 102 (2002) 3

Nitrogen supplementation

- Ruminal degradability and in vitro intestinal digestibility of sunflower meal and in vitro digestibility of olive by-products supplemented with urea or sunflower meal. Comparison between goats and sheep, 110 (2003) 3

Non-ruminant

- A review of interactions between dietary fibre and the intestinal mucosa, and their consequences on digestive health in young non-ruminant animals, 108 (2003) 95

North Ronaldsay sheep

- A qualitative and quantitative evaluation of the seaweed diet of North Ronaldsay sheep, 105 (2003) 21

NRC

A new method to estimate microbial nitrogen escape from the rumen of the dairy cow, 101 (2002) 201

NSP

The effects of increasing levels of soluble non-starch polysaccharides and inclusion of feed enzymes in dog diets on faecal quality and digestibility, 108 (2003) 71

Nutrient digestibilities

Rumen fermentation patterns and nutrient digestion in lambs fed cottonseed meal supplemental diets, 103 (2003) 1

Nutrient utilization

Nutrient utilization and growth performance of defaunated and faunated lambs maintained on complete diets containing varying proportion of roughage and concentrate, 101 (2002) 87

Influence of dietary protected lipids on intake and digestibility of straw based diets in Deccani sheep, 106 (2003) 29

Response of gravid does to partial replacement of dietary protein by a leaf meal mixture of *Leucaena leucocephala*, *Morus alba* and *Azadirachta indica*, 109 (2003) 171

Nutrition

The effect of dietary supplementation with trivalent chromium on production performance of laying hens and the chromium content in the yolk, 106 (2003) 149

Carbon balances for in vitro digestion and fermentation of potential roughages for pregnant sows, 110 (2003) 159

Nutritional value

Effect of chemical content and physical characteristics on nutritional value of wheat, barley and oats for poultry, 102 (2002) 71

Nutritive value

Nutritive value of whole crop wheat silage harvested at three stages of maturity, 103 (2003) 85

Effects of alkalis, oxidants and urea on the nutritive value of Rhodes grass (*Chloris gayana* cv. Callide), 103 (2003) 113

Nutritional quality and yield of seedling alfalfa established with a barley companion crop and weeds, 103 (2003) 163

Potential nutritional assessment of dwarf elephant grass (*Pennisetum purpureum* Schum. cv. Mott) by chemical composition, digestion and net portal flux of oxygen in cattle, 104 (2003) 29

Prediction of chemical composition, nutritive value and ingredient composition of European compound feeds for rabbits by near infrared reflectance spectroscopy (NIRS), 104 (2003) 153

The effect of condensed tannins on the nutrition and health of ruminants fed fresh temperate forages: a review, 106 (2003) 3

Comparison among methods of nutritional evaluation of dietary ingredients for rabbits, 109 (2003) 195

Nylon capsule

Whole tract and post ruminal digestibility determined by in situ ruminal, intestinal mobile nylon bag and whole tract nylon capsule methods, 106 (2003) 59

O**Oats**

Effect of chemical content and physical characteristics on nutritional value of wheat, barley and oats for poultry, 102 (2002) 71

Oats pasture

Performance of beef cattle grazing oats supplemented with energy, escape protein or high quality hay, 105 (2003) 29

Oils

Evaluation of several potential bioactive agents for reducing protozoal activity in vitro, 105 (2003) 163

Oilseed meal

Phosphorus availability of oilseed meals determined by the apparent faecal digestibility technique, 108 (2003) 43

Oligosaccharides

Effects of dietary oligosaccharides on microbial diversity and fructo-oligosaccharide degrading bacteria in faeces of piglets post-weaning, 109 (2003) 133

Olive by-products

Ruminal degradability and in vitro intestinal digestibility of sunflower meal and in vitro

digestibility of olive by-products supplemented with urea or sunflower meal. Comparison between goats and sheep, 110 (2003) 3

Olive cake

Chemical composition and nutrients availability for goats and sheep of two-stage olive cake and olive leaves, 107 (2003) 61

Olive leaves

Chemical composition and nutrients availability for goats and sheep of two-stage olive cake and olive leaves, 107 (2003) 61

Omasal canal

Effects of several protein supplements on flow of soluble non-ammonia nitrogen from the forestomach and milk production in dairy cows, 102 (2002) 15

Orchardgrass

The effect of different moisture contents at ensiling on silo degradation and digestibility of structural carbohydrates of orchardgrass, 101 (2002) 127

Organic matter

The nutritive value of concentrate feedstuffs for ruminant animals. Part I: In situ ruminal degradability of dry matter and organic matter, 110 (2003) 111

Oven drying

Effect of preparation method on composition and NIR spectra of forage samples, 107 (2003) 191

Overdose

The effect of dietary supplementation with trivalent chromium on production performance of laying hens and the chromium content in the yolk, 106 (2003) 149

Oxidants

Effects of alkalis, oxidants and urea on the nutritive value of Rhodes grass (*Chloris gayana* cv. Callide), 103 (2003) 113

Oxygen portal flux

Potential nutritional assessment of dwarf elephant grass (*Pennisetum purpureum* Schum. cv. Mott) by chemical composition, digestion and net portal flux of oxygen in cattle, 104 (2003) 29

P

Panicum maximum

Nutritive value of *Ficus religiosa* in West African dwarf goats, 105 (2003) 71

Particle size

Postprandial changes in particle associated ruminal bacteria in sheep fed ammoniated rice straw, 102 (2002) 207

Passage rate

Use of animal and dietary information to predict rumen turnover, 106 (2003) 95

Pasture

Selection of forage species by dairy cattle on complex Sicilian pasture, 105 (2003) 205

Pasture composition

Effect of preparation method on composition and NIR spectra of forage samples, 107 (2003) 191

Pectin

Identification of lucerne stem cell wall traits related to in vitro neutral detergent fibre digestibility, 110 (2003) 17

PEG-6000

Effect of polyethylene glycol-6000 on nutrient intake, digestion and growth of kids browsing *Prosopis cineraria*, 101 (2002) 45

Pelleting

Interactions between dietary phosphorus level, phytase supplementation and pelleting on performance and bone parameters of broilers fed high levels of rice bran, 103 (2003) 155

Pepsin-cellulase

Prediction of the digestibility of the primary growth of grass silages harvested at different stages of maturity from chemical composition and pepsin-cellulase solubility, 103 (2003) 97

Pepsin-cellulase solubility

Prediction of the digestibility of primary growth and regrowth grass silages from chemical composition, pepsin-cellulase solubility and indigestible cell wall content, 110 (2003) 61

Pepsin-pancreatin

The nutritive value of concentrate feedstuffs for ruminant animals. Part III. Small intestinal digestibility as measured by in vitro or mobile bag techniques, 110 (2003) 145

Peptides

Effects of urea, isolated soybean protein and blood meal on growing steers fed a corn-based diet, 102 (2002) 3

Performance

Brassica by-products in diets of rainbow trout (*Oncorhynchus mykiss*) and their effects on performance, body composition, thyroid status and liver histology, 101 (2002) 171

Usefulness of ionophores for lactating dairy cows: a review, 106 (2003) 39

Effect of different choice feeding methods based on whole wheat on performance of male broiler chickens, 106 (2003) 131

Effects of copper source and concentration on copper status and immune function in growing and finishing steers, 110 (2003) 31

The effect of site of starch digestion on performance of broiler chickens, 110 (2003) 175

Effects of inclusion with blue lupins (*Lupinus angustifolius*) in broiler diets and enzyme supplementation on production performance, digestibility and dietary AME content, 110 (2003) 185

pH levels

Effects of pH and fibrolytic enzymes on digestibility, bacterial protein synthesis, and fermentation in continuous culture, 102 (2002) 137

Phenolics

Ameliorating the toxic effects of *Acacia angustissima* with polyethylene glycol in rats, 106 (2003) 165

Phosphorus

Effects of phytase on apparent digestibility of organic phosphorus and nutrients in maize-soya bean meal based diets for sows, 104 (2003) 133

Additivity of the effect of cereal and microbial phytases on apparent phosphorus absorption in growing pigs fed diets with marginal P supply, 104 (2003) 143

Phosphorus availability of oilseed meals determined by the apparent faecal digestibility technique, 108 (2003) 43

Phosphorus availability

Interactions between dietary phosphorus level, phytase supplementation and pelleting on performance and bone parameters of broilers fed high levels of rice bran, 103 (2003) 155

Phosphorus excretion

Influence of feeding various phosphorus sources on apparent digestibility of phosphorus in dairy cows, 109 (2003) 95

Phytase

Interactions between dietary phosphorus level, phytase supplementation and pelleting on performance and bone parameters of broilers fed high levels of rice bran, 103 (2003) 155

Effects of phytase on apparent digestibility of organic phosphorus and nutrients in maize-soya bean meal based diets for sows, 104 (2003) 133

The influence of dietary microbial phytase and copper on copper status in growing pigs, 106 (2003) 139

Phosphorus availability of oilseed meals determined by the apparent faecal digestibility technique, 108 (2003) 43

The effect of citric acid and microbial phytase on mineral utilization in broiler chicks, 110 (2003) 201

Phytate

Interactions between dietary phosphorus level, phytase supplementation and pelleting on performance and bone parameters of broilers fed high levels of rice bran, 103 (2003) 155

Phytate degradation

Post-ruminal phytate degradation in sheep, 101 (2002) 55

Pig

Effect of *Leucaena leucocephala* leaf meal treated with acetic acid or sodium hydroxide on apparent digestibility and nitrogen retention in pig diets, 101 (2002) 151

Microbial caecal fermentation in Iberic or Landrace pigs given acorn/sorghum or maize diets estimated in vitro using the gas production technique, 102 (2002) 93

The use of a model ileum to investigate the effects of novel and existing antimicrobials on indigenous porcine gastrointestinal microflora: using vancomycin as an example, 103 (2003) 123

Additivity of the effect of cereal and microbial phytases on apparent phosphorus absorption in

- growing pigs fed diets with marginal P supply, 104 (2003) 143
- The influence of dietary microbial phytase and copper on copper status in growing pigs, 106 (2003) 139
- Effects of different sources and levels of dietary fibre in diets on performance, digesta characteristics and antibiotic treatment of pigs after weaning, 107 (2003) 129
- Pig diets**
- The influence of fermented putak on diet digestibility and growth performance of weanling pigs, 102 (2002) 217
- Pig feeding**
- Endogenous lipolysis in feedstuffs and compound feeds for pigs: effects of storage time and conditions and lipase and/or emulsifier addition, 102 (2002) 53
- Piglet**
- Influence of naked barley cultivar with normal, amylose-rich or amylopectin-rich starch and enzyme supplementation on digestibility and piglet performance, 104 (2003) 121
- The effect of genotype and dietary fibre level on the caecal bacterial enzyme activity of young piglets: digestive consequences, 106 (2003) 119
- Effects of dietary oligosaccharides on microbial diversity and fructo-oligosaccharide degrading bacteria in faeces of piglets post-weaning, 109 (2003) 133
- Fat nutrition and metabolism in piglets: a review, 109 (2003) 151
- Pithecellobium saman***
- Saponin rich tropical fruits affect fermentation and methanogenesis in faunated and defaunated rumen fluid, 109 (2003) 79
- Plane of nutrition**
- Nutrient utilization and growth performance of defaunated and faunated lambs maintained on complete diets containing varying proportion of roughage and concentrate, 101 (2002) 87
- Plant extract**
- Effects of dry plant extracts on feed degradation and the production of rumen microbial biomass in a dual outflow fermenter, 101 (2002) 183
- Plant proteins**
- Effect of heat processing of protein sources on the disappearance of their selenium from mobile bags in the digestive tract of dairy cows, 107 (2003) 15
- Plasma minerals**
- Performance of beef cattle grazing oats supplemented with energy, escape protein or high quality hay, 105 (2003) 29
- Polyamines**
- Levels of biogenic amines in maize silages, 102 (2002) 197
- Post-larvae**
- Effect of dietary protein level on growth, survival, feed utilisation and body composition of hybrid *Clarias* catfish (*Clarias batrachus* × *Clarias gariepinus*), 104 (2003) 169
- Postprandial change**
- Postprandial changes in particle associated ruminal bacteria in sheep fed ammoniated rice straw, 102 (2002) 207
- Potato starch**
- Ileal and total tract digestibility, and protein and fat balance in pigs fed rice with addition of potato starch, sugar beet pulp or wheat bran, 102 (2002) 125
- Predictions**
- The effect of freezing and thawing on grass silage quality predictions based on near infrared reflectance spectroscopy, 102 (2002) 151
- Pregnant sows**
- Carbon balances for in vitro digestion and fermentation of potential roughages for pregnant sows, 110 (2003) 159
- Processing**
- Rumen fermentation patterns and nutrient digestion in lambs fed cottonseed meal supplemental diets, 103 (2003) 1
- Effects of prepress-solvent extraction on the nutritional value of canola meal for broiler chickens, 104 (2003) 111
- In vitro gas production as a method to compare fermentation characteristics of steam-flaked corn, 105 (2003) 109

The protein value of differently processed rapeseed solvent meal and cake assessed by in vitro methods and in tests with rats, 106 (2003) 175
Using the NRC-2001 model and the DVE/OEB system to evaluate nutritive values of Harrington (malting-type) and Valier (feed-type) barley for ruminants, 107 (2003) 45

Prosopis cineraria

Effect of polyethylene glycol-6000 on nutrient intake, digestion and growth of kids browsing *Prosopis cineraria*, 101 (2002) 45

Protected lipid

Fish oil metabolism in ruminants. III. Transfer of *n*-3 polyunsaturated fatty acids (PUFA) from tuna oil into sheep's milk, 108 (2003) 1

Protein

Effect of a wide range in the ratio of supplemental rumen degradable protein to starch on utilization of low-quality, grass hay by beef steers, 105 (2003) 5

Whole tract and post ruminal digestibility determined by in situ ruminal, intestinal mobile nylon bag and whole tract nylon capsule methods, 106 (2003) 59

Protein and energy evaluation

Using the NRC-2001 model and the DVE/OEB system to evaluate nutritive values of Harrington (malting-type) and Valier (feed-type) barley for ruminants, 107 (2003) 45

Protein degradation

Rumen digesta kinetics in cold exposed prolific sheep: impact on protein evaluation, 101 (2002) 17

Protein digestibility

Evaluation of the variability in chemical composition and digestibility of different lupin (*Lupinus angustifolius*) kernel meals when fed to rainbow trout (*Oncorhynchus mykiss*), 107 (2003) 117

Protein digestion

Use of sunflower meal or fish meal as protein supplement for high quality fresh forage diets: ruminal fermentation, microbial protein synthesis and sites of digestion, 101 (2002) 61

Protein evaluation

Rumen degradation characteristics of nutrients in maize silages and evaluation of laboratory

measurements and NIRS as predictors, 101 (2002) 73

Rumen degradation characteristics of nutrients in compound feeds and the evaluation of tables, laboratory methods and NIRS as predictors, 107 (2003) 29

Protein level

Effect of dietary protein level on growth, survival, feed utilisation and body composition of hybrid *Clarias* catfish (*Clarias batrachus* × *Clarias gariepinus*), 104 (2003) 169

Protein solubility

The protein value of differently processed rapeseed solvent meal and cake assessed by in vitro methods and in tests with rats, 106 (2003) 175

Effect of preparation method on composition and NIR spectra of forage samples, 107 (2003) 191

Protein supplements

Effects of several protein supplements on flow of soluble non-ammonia nitrogen from the forestomach and milk production in dairy cows, 102 (2002) 15

Nutritive value of house fly (*Musca domestica*) larvae as a feed supplement for turkey poults, 105 (2003) 225

Protein synthesis

Effects of dry plant extracts on feed degradation and the production of rumen microbial biomass in a dual outflow fermenter, 101 (2002) 183

Rice straw degradation and biomass synthesis by rumen micro-organisms in continuous culture in response to ammonia treatment and legume extract supplementation, 105 (2003) 95

Protozoa

Evaluation of several potential bioactive agents for reducing protozoal activity in vitro, 105 (2003) 163

Saponin rich tropical fruits affect fermentation and methanogenesis in faunated and defaunated rumen fluid, 109 (2003) 79

Purine excretion

Purine excretion and estimated microbial protein yield in sheep fed diets differing in protein degradability, 105 (2003) 123

Putak (*Corypha elata robx*)

The influence of fermented putak on diet digestibility and growth performance of weanling pigs, 102 (2002) 217

Q**Quebracho tannins extract**

Effect of different doses of quebracho tannins extract on rumen fermentation in ewes, 109 (2003) 65

R**Rabbits**

Prediction of chemical composition, nutritive value and ingredient composition of European compound feeds for rabbits by near infrared reflectance spectroscopy (NIRS), 104 (2003) 153
Comparison among methods of nutritional evaluation of dietary ingredients for rabbits, 109 (2003) 195

Rainbow trout

Brassica by-products in diets of rainbow trout (*Oncorhynchus mykiss*) and their effects on performance, body composition, thyroid status and liver histology, 101 (2002) 171

Rainfall event

Changes in nutritive value of tall fescue hay as affected by natural rainfall and moisture concentration at baling, 109 (2003) 47

Ramlic Lamb

Effects of urea and sulfur on performance of faunate and defaunate Ramlic lambs, and some rumen and blood parameters, 109 (2003) 35

Rapeseed cake

The protein value of differently processed rapeseed solvent meal and cake assessed by in vitro methods and in tests with rats, 106 (2003) 175

Rapeseed meal

Effects of prepress-solvent extraction on the nutritional value of canola meal for broiler chickens, 104 (2003) 111

The protein value of differently processed rapeseed solvent meal and cake assessed by in vitro methods and in tests with rats, 106 (2003) 175

Ration

Biological availability of calcium in broiler chicks from different calcium sources found in Nigeria, 104 (2003) 209

Rats

Ameliorating the toxic effects of *Acacia angustissima* with polyethylene glycol in rats, 106 (2003) 165

The enzyme hydrolysed protein method for the determination of endogenous ileal nitrogen and amino acid flows—a modification, 108 (2003) 207

Recovery index

Effect of feed restriction on compensatory growth of Arsi (*Bos indicus*) bulls, 103 (2003) 29

Reducing sugar

In situ digestibility of protein in barley grain (*Hordeum vulgare*) and peas (*Pisum sativum* L.) in dairy cows: influence of heat treatment and glucose addition, 107 (2003) 87

In situ digestibility of starch in barley grain (*Hordeum vulgare*) and peas (*Pisum sativum* L.) in dairy cows: influence of heat treatment and glucose addition, 107 (2003) 105

Regrowth

Comparison of the fatty acid composition of fresh and ensiled perennial ryegrass (*Lolium perenne* L.), affected by cultivar and regrowth interval, 108 (2003) 191

Reproductive performance

Usefulness of ionophores for lactating dairy cows: a review, 106 (2003) 39

Effect of feeding calcium salts of long-chain fatty acids, from palm fatty acid distillate or soybean oil, to high producing dairy cows on milk yield and composition, and on selected blood and reproductive parameters, 108 (2003) 25

Response of gravid does to partial replacement of dietary protein by a leaf meal mixture of *Leucaena leucocephala*, *Morus alba* and *Azadirachta indica*, 109 (2003) 171

Requirement

Requirement of calcium for commercial broilers and white leghorn layers at low dietary phosphorus levels, 106 (2003) 199

Restriction period

Effect of feed restriction on compensatory growth of Arsi (*Bos indicus*) bulls, 103 (2003) 29

Rhodes grass

Effects of alkalis, oxidants and urea on the nutritive value of rhodes grass (*Chloris gayana* cv. Callide), 103 (2003) 113

Rice

Ileal and total tract digestibility, and protein and fat balance in pigs fed rice with addition of potato starch, sugar beet pulp or wheat bran, 102 (2002) 125

Effects of different sources and levels of dietary fibre in diets on performance, digesta characteristics and antibiotic treatment of pigs after weaning, 107 (2003) 129

The replacement value of sorghum and maize with or without supplemental enzymes for rice in extruded dog foods, 108 (2003) 61

Rice straw

FIBEX-treated rice straw as a feed ingredient for lactating dairy cows, 103 (2003) 41

Rice straw degradation and biomass synthesis by rumen micro-organisms in continuous culture in response to ammonia treatment and legume extract supplementation, 105 (2003) 95

The effect of agronomic improvement and urea treatment on the nutritional value of Malaysian rice straw varieties, 108 (2003) 133

Roasting

Effect of heat processing of protein sources on the disappearance of their selenium from mobile bags in the digestive tract of dairy cows, 107 (2003) 15

Roughage

Carbon balances for in vitro digestion and fermentation of potential roughages for pregnant sows, 110 (2003) 159

Roughage:concentrate ratio

Nutrient utilization and growth performance of defaunated and faunated lambs maintained on complete diets containing varying proportion of roughage and concentrate, 101 (2002) 87

Rumen

Effects of dry plant extracts on feed degradation and the production of rumen microbial biomass in a dual outflow fermenter, 101 (2002) 183

A new method to estimate microbial nitrogen escape from the rumen of the dairy cow, 101 (2002) 201

Effects of several protein supplements on flow of soluble non-ammonia nitrogen from the forestomach and milk production in dairy cows, 102 (2002) 15

Effects of urea infused into the rumen on liquid- and particle-associated fibrolytic enzyme activities in steers fed low quality grass hay, 104 (2003) 13

Fish oils as potent rumen methane inhibitors and associated effects on rumen fermentation in vitro and in vivo, 104 (2003) 41

Effect of increasing availability of water-soluble carbohydrates on in vitro rumen fermentation, 104 (2003) 59

Rice straw degradation and biomass synthesis by rumen micro-organisms in continuous culture in response to ammonia treatment and legume extract supplementation, 105 (2003) 95

The fermentation of soybean meal by rumen microbes in vitro reveals different kinetic features for the inactivation and the degradation of trypsin inhibitor protein, 106 (2003) 189

Rumen content

Use of animal and dietary information to predict rumen turnover, 106 (2003) 95

Rumen degradability

Chemical composition and nutrients availability for goats and sheep of two-stage olive cake and olive leaves, 107 (2003) 61

Rumen degradability characteristics of xylose treated canola and soybean meals, 107 (2003) 211

Rumen degradable N

Purine excretion and estimated microbial protein yield in sheep fed diets differing in protein degradability, 105 (2003) 123

Rumen degradation

Rumen degradation characteristics of nutrients in maize silages and evaluation of laboratory measurements and NIRS as predictors, 101 (2002) 73

Quantitative review of in situ starch degradation in the rumen, 106 (2003) 81

Rumen degradation characteristics of nutrients in compound feeds and the evaluation of tables, laboratory methods and NIRS as predictors, 107 (2003) 29

In situ digestibility of protein in barley grain (*Hordeum vulgare*) and peas (*Pisum sativum* L.) in dairy cows: influence of heat treatment and glucose addition, 107 (2003) 87

In situ digestibility of starch in barley grain (*Hordeum vulgare*) and peas (*Pisum sativum* L.) in dairy cows: influence of heat treatment and glucose addition, 107 (2003) 105

Rumen degradation and intestinal digestibility of rumen protected amino acids: comparison between in situ and in vitro data, 108 (2003) 223

Rumen digestion

Rumen digesta kinetics in cold exposed prolific sheep: impact on protein evaluation, 101 (2002) 17

Rumen environment

Relationships between patterns of rumen fermentation measured in sheep and in situ degradability and the in vitro gas production profile of the diet, 101 (2002) 31

Rumen fermentation

Rumen fermentation patterns and nutrient digestion in lambs fed cottonseed meal supplemental diets, 103 (2003) 1

Rumen parameters

Performance of beef cattle grazing oats supplemented with energy, escape protein or high quality hay, 105 (2003) 29

Effects of urea and sulfur on performance of faunate and defaunate Ramlic lambs, and some rumen and blood parameters, 109 (2003) 35

Rumen Simulation Technique

Effects of a *Saccharomyces cerevisiae* feed supplement on *Escherichia coli* O157:H7 in ruminal fluid in vitro, 104 (2003) 179

Rumenic acid

Grazing allowance after the morning or afternoon milking for lactating cows fed a total mixed ration (TMR) enhances *trans*11-18:1 and *cis*9-*trans*11-18:2 (rumenic acid) in milk fat to different extents, 109 (2003) 105

Ruminal bacteria

Postprandial changes in particle associated ruminal bacteria in sheep fed ammoniated rice straw, 102 (2002) 207

Ruminal fermentation

Evaluation of several potential bioactive agents for reducing protozoal activity in vitro, 105 (2003) 163

Ruminal turnover

Use of animal and dietary information to predict rumen turnover, 106 (2003) 95

Ruminant

Degradation in the rumen and nutritional value of lupin (*Lupinus albus* L.) seed proteins effect of extrusion, 105 (2003) 55

Effect of specific weight on the metabolizable energy content of four cultivars of wheat grain in ewes, 105 (2003) 215

Using the NRC-2001 model and the DVE/OEB system to evaluate nutritive values of Harrington (malting-type) and Valier (feed-type) barley for ruminants, 107 (2003) 45

Merit of *Gleditsia triacanthos* pods in animal feeding. Chemical composition and nutritional evaluation, 107 (2003) 151

Phosphorus availability of oilseed meals determined by the apparent faecal digestibility technique, 108 (2003) 43

Rusitec

Efficacy of plant extracts rich in secondary constituents to modify rumen fermentation, 101 (2002) 101

Effects of a *Saccharomyces cerevisiae* feed supplement on *Escherichia coli* O157:H7 in ruminal fluid in vitro, 104 (2003) 179

Rye

Chick adaptation to diets based on milling fractions of rye varying in arabinoxylans content, 101 (2002) 135

S

Saccharomyces cerevisiae

The influence of fermented putak on diet digestibility and growth performance of weanling pigs, 102 (2002) 217

Saccharomyces cerevisiae

Effects of a *Saccharomyces cerevisiae* feed supplement on *Escherichia coli* O157:H7 in ruminal fluid in vitro, 104 (2003) 179

Salmonella

The use of a model ileum to investigate the effects of novel and existing antimicrobials on indigenous porcine gastrointestinal microflora: using vancomycin as an example, 103 (2003) 123

Samples

The nutritive value of concentrate feedstuffs for ruminant animals. Part II: In situ ruminal degradability of crude protein, 110 (2003) 131

Sapindus saponaria

Saponin rich tropical fruits affect fermentation and methanogenesis in faunated and defaunated rumen fluid, 109 (2003) 79

Saponins

Efficacy of plant extracts rich in secondary constituents to modify rumen fermentation, 101 (2002) 101

Evaluation of several potential bioactive agents for reducing protozoal activity in vitro, 105 (2003) 163

Saponin rich tropical fruits affect fermentation and methanogenesis in faunated and defaunated rumen fluid, 109 (2003) 79

SCFA profile

Relationships between patterns of rumen fermentation measured in sheep and in situ degradability and the in vitro gas production profile of the diet, 101 (2002) 31

Seaweed

A qualitative and quantitative evaluation of the seaweed diet of North Ronaldsay sheep, 105 (2003) 21

Selenium

Effect of heat processing of protein sources on the disappearance of their selenium from mobile bags in the digestive tract of dairy cows, 107 (2003) 15

Shearing

Rumen digesta kinetics in cold exposed prolific sheep: impact on protein evaluation, 101 (2002) 17

Sheep

Post-ruminal phytate degradation in sheep, 101 (2002) 55

Effect of specific weight on the metabolizable energy content of four cultivars of wheat grain in ewes, 105 (2003) 215

Use of animal and dietary information to predict rumen turnover, 106 (2003) 95

Fish oil metabolism in ruminants. III. Transfer of *n*-3 polyunsaturated fatty acids (PUFA) from tuna oil into sheep's milk, 108 (2003) 1

Partially or totally replacing soybean meal and maize by chickpeas in lamb diets: intramuscular fatty acid composition, 108 (2003) 215

Effect of different doses of quebracho tannins extract on rumen fermentation in ewes, 109 (2003) 65

Effects of oilseed meals and grain-urea supplements fed infrequently on digestion in sheep. 2. Cereal straw diets, 110 (2003) 95

Sheep feeding

Evaluation of the use of *Buddleia skutchii* tree leaves and Kikuyu (*Pennisetum clandestinum*) grass hay in sheep feeding, 106 (2003) 209

Short-chain fatty acids (SCFA)

Effect of type and level of fibre on gastric microbial activity and short-chain fatty acid concentrations in gestating sows, 104 (2003) 95

Carbon balances for in vitro digestion and fermentation of potential roughages for pregnant sows, 110 (2003) 159

Shorts

Chick adaptation to diets based on milling fractions of rye varying in arabinoxylans content, 101 (2002) 135

Shrubs

In vitro fermentation kinetics of some halophyte shrubs sampled at three stages of maturity, 104 (2003) 215

Silage

Nutritive value of whole crop wheat silage harvested at three stages of maturity, 103 (2003) 85

A laboratory evaluation of comfrey (*Symphytum officinale* L.) as a forage crop for ensilage, 104 (2003) 227

Ensiling forage garland (*Chrysanthemum coronarium* L.) at two stages of maturity and at different wilting levels, 108 (2003) 181

Comparison of the fatty acid composition of fresh and ensiled perennial ryegrass (*Lolium perenne*

L.), affected by cultivar and regrowth interval, 108 (2003) 191

Small intestinal digestion

The nutritive value of concentrate feedstuffs for ruminant animals. Part III. Small intestinal digestibility as measured by in vitro or mobile bag techniques, 110 (2003) 145

Sodium hydroxide

Effect of *Leucaena leucocephala* leaf meal treated with acetic acid or sodium hydroxide on apparent digestibility and nitrogen retention in pig diets, 101 (2002) 151

Soluble non-ammonia nitrogen

Effects of several protein supplements on flow of soluble non-ammonia nitrogen from the forestomach and milk production in dairy cows, 102 (2002) 15

Sorghum

The replacement value of sorghum and maize with or without supplemental enzymes for rice in extruded dog foods, 108 (2003) 61

Sources

The nutritive value of concentrate feedstuffs for ruminant animals. Part I: In situ ruminal degradability of dry matter and organic matter, 110 (2003) 111

The nutritive value of concentrate feedstuffs for ruminant animals. Part III. Small intestinal digestibility as measured by in vitro or mobile bag techniques, 110 (2003) 145

Sows

Effects of phytase on apparent digestibility of organic phosphorus and nutrients in maize-soya bean meal based diets for sows, 104 (2003) 133

Soy hulls

Soybean hulls as a replacement of forage neutral detergent fiber in total mixed rations of lactating cows, 106 (2003) 21

Soyabean meal

Evaluation of soyabean meal as a protein source in canine foods, 109 (2003) 121

Soyabeans

The fermentation of soybean meal by rumen microbes in vitro reveals different kinetic

features for the inactivation and the degradation of trypsin inhibitor protein, 106 (2003) 189

Evaluation of soyabean meal as a protein source in canine foods, 109 (2003) 121

Soybean cake

Digestion and passage kinetics of fibre in mature dairy heifers maintained on poor quality hay as affected by the source and level of nitrogen supplementation, 109 (2003) 19

Soybean hulls

Development and evaluation of a pelleted feedstuff containing condensed corn steep liquor and raw soybean hulls for dairy cattle diets, 107 (2003) 75

Soybean meal

Rumen degradability characteristics of xylose treated canola and soybean meals, 107 (2003) 211

Partially or totally replacing soybean meal and maize by chickpeas in lamb diets: intramuscular fatty acid composition, 108 (2003) 215

Soybean oil

Dietary canola or soybean oil with two levels of conjugated linoleic acids (CLA) alter profiles of 18:1 and 18:2 isomers in blood plasma and milk fat from dairy cows, 103 (2003) 63

Specific weight

Effect of specific weight on the metabolizable energy content of four cultivars of wheat grain in ewes, 105 (2003) 215

Starch

Influence of prolonged adaptation periods on starch degradation in the digestive tract of dairy cows, 103 (2003) 15

Effect of a wide range in the ratio of supplemental rumen degradable protein to starch on utilization of low-quality, grass hay by beef steers, 105 (2003) 5

Quantitative review of in situ starch degradation in the rumen, 106 (2003) 81

Estimating silage energy value and milk yield to rank corn hybrids, 109 (2003) 1

Starch digestion

The effect of site of starch digestion on performance of broiler chickens, 110 (2003) 175

Steam-flaked corn

In vitro gas production as a method to compare fermentation characteristics of steam-flaked corn, 105 (2003) 109

Steers

Effects of urea, isolated soybean protein and blood meal on growing steers fed a corn-based diet, 102 (2002) 3

Effects of copper source and concentration on copper status and immune function in growing and finishing steers, 110 (2003) 31

Stochastic feed formulation

Stochastic true digestible amino acid values, 102 (2002) 225

Straw based diets

Influence of dietary protected lipids on intake and digestibility of straw based diets in Deccani sheep, 106 (2003) 29

Straw fermentation

Gas production from straw incubated in vitro with different levels of purified carbohydrates, 101 (2002) 1

Structural carbohydrates

The effect of different moisture contents at ensiling on silo degradation and digestibility of structural carbohydrates of orchardgrass, 101 (2002) 127

Sugar beet pulp

Ileal and total tract digestibility, and protein and fat balance in pigs fed rice with addition of potato starch, sugar beet pulp or wheat bran, 102 (2002) 125

Sulfur

Effects of urea and sulfur on performance of faunate and defaunate Ramlic lambs, and some rumen and blood parameters, 109 (2003) 35

Sunflower meal

Use of sunflower meal or fish meal as protein supplement for high quality fresh forage diets: ruminal fermentation, microbial protein synthesis and sites of digestion, 101 (2002) 61

Ruminal degradability and in vitro intestinal digestibility of sunflower meal and in vitro digestibility of olive by-products supplemented with urea or sunflower meal. Comparison between goats and sheep, 110 (2003) 3

Superoxide dismutase

Effects of source and level of magnesium and Vitamin E on prevention of hepatic peroxidation and oxidative deterioration of broiler meat, 107 (2003) 143

Supplementation

Performance of beef cattle grazing oats supplemented with energy, escape protein or high quality hay, 105 (2003) 29

Influence of dietary protected lipids on intake and digestibility of straw based diets in Deccani sheep, 106 (2003) 29

Feeding value of wild Napier grass (*Pennisetum macrourum*) for cattle supplemented with protein and/or energy rich supplements, 108 (2003) 15

Survival

Effect of dietary protein level on growth, survival, feed utilisation and body composition of hybrid *Clarias* catfish (*Clarias batrachus* × *Clarias gariepinus*), 104 (2003) 169

T

Tall fescue hay

Changes in nutritive value of tall fescue hay as affected by natural rainfall and moisture concentration at baling, 109 (2003) 47

Tannin

Effect of polyethylene glycol-6000 on nutrient intake, digestion and growth of kids browsing *Prosopis cineraria*, 101 (2002) 45

Efficacy of plant extracts rich in secondary constituents to modify rumen fermentation, 101 (2002) 101

Ameliorating the toxic effects of *Acacia angustissima* with polyethylene glycol in rats, 106 (2003) 165

Effect of PEG and olive cake feed blocks supply on feed intake, digestion, and health of goats given kermes oak (*Quercus coccifera* L.) foliage, 110 (2003) 45

Tef straw

In vitro and in situ evaluation of selected multi-purpose trees, wheat bran and *Lablab purpureus* as potential feed supplements to tef (*Eragrostis tef*) straw, 108 (2003) 159

Teff straw

Effect of feed restriction on compensatory growth of Arsi (*Bos indicus*) bulls, 103 (2003) 29

Temperate forages

The effect of condensed tannins on the nutrition and health of ruminants fed fresh temperate forages: a review, 106 (2003) 3

Temperature effect

Changes in the levels of histamine during processing and storage of fish meal, 107 (2003) 161

Thawing

The effect of freezing and thawing on grass silage quality predictions based on near infrared reflectance spectroscopy, 102 (2002) 151

The DVE/OEB system

Using the NRC-2001 model and the DVE/OEB system to evaluate nutritive values of Harrington (malting-type) and Valier (feed-type) barley for ruminants, 107 (2003) 45

Thiobarbituric acid reactive substance

Effects of source and level of magnesium and Vitamin E on prevention of hepatic peroxidation and oxidative deterioration of broiler meat, 107 (2003) 143

Three day supplementation

Effects of oilseed meal and grain-urea supplements fed infrequently on digestion in sheep. 1. Low quality grass hay diets, 110 (2003) 75

Effects of oilseed meals and grain-urea supplements fed infrequently on digestion in sheep. 2. Cereal straw diets, 110 (2003) 95

Thyroid hormones

Brassica by-products in diets of rainbow trout (*Oncorhynchus mykiss*) and their effects on performance, body composition, thyroid status and liver histology, 101 (2002) 171

trans11,cis15-18:2

Grazing allowance after the morning or afternoon milking for lactating cows fed a total mixed ration (TMR) enhances *trans*11-18:1 and *cis*9,-*trans*11-18:2 (rumenic acid) in milk fat to different extents, 109 (2003) 105

Triticale

Use of triticale alone and in combination with wheat or maize: effects of diet type and enzyme

supplementation on hen performance, egg quality, organ weights, intestinal viscosity and digestive system characteristics, 105 (2003) 149

Tropical forage

Potential nutritional assessment of dwarf elephant grass (*Pennisetum purpureum* Schum. cv. Mott) by chemical composition, digestion and net portal flux of oxygen in cattle, 104 (2003) 29

Trypsin inhibitor

The fermentation of soybean meal by rumen microbes in vitro reveals different kinetic features for the inactivation and the degradation of trypsin inhibitor protein, 106 (2003) 189

Tuna oil

Fish oil metabolism in ruminants. III. Transfer of *n*-3 polyunsaturated fatty acids (PUFA) from tuna oil into sheep's milk, 108 (2003) 1

Turkey

Nutritive value of house fly (*Musca domestica*) larvae as a feed supplement for turkey poults, 105 (2003) 225

U

Ultrafiltration

The enzyme hydrolysed protein method for the determination of endogenous ileal nitrogen and amino acid flows—a modification, 108 (2003) 207

Urea

Effects of urea, isolated soybean protein and blood meal on growing steers fed a corn-based diet, 102 (2002) 3

Effects of alkalis, oxidants and urea on the nutritive value of Rhodes grass (*Chloris gayana* cv. Callide), 103 (2003) 113

Effects of processing factors on in vitro ammonia release from cooked molasses blocks containing urea, 107 (2003) 173

Digestion and passage kinetics of fibre in mature dairy heifers maintained on poor quality hay as affected by the source and level of nitrogen supplementation, 109 (2003) 19

Effects of urea and sulfur on performance of faunated and defaunated Ramlic lambs, and some rumen and blood parameters, 109 (2003) 35

Urea infusion

Effects of urea infused into the rumen on liquid- and particle-associated fibrolytic enzyme activities in steers fed low quality grass hay, 104 (2003) 13

Urea molasses mineral block

Effect of cold process monensin enriched urea molasses mineral blocks on performance of crossbred calves fed a wheat straw based diet, 103 (2003) 51

Urea treatment

Changes in chemical composition and nutritive value of urea treated whole crop wheat during exposure to air, 102 (2002) 181

The effect of agronomic improvement and urea treatment on the nutritional value of Malaysian rice straw varieties, 108 (2003) 133

Urinary purine derivatives

Urinary purine derivative excretion in swamp buffaloes after duodenal purine base infusion, 104 (2003) 191

V

Vaccenic acid

Grazing allowance after the morning or afternoon milking for lactating cows fed a total mixed ration (TMR) enhances *trans*11-18:1 and *cis*9-*trans*11-18:2 (rumenic acid) in milk fat to different extents, 109 (2003) 105

Valine

Effect of excess leucine in low protein diet on ketosis in 3-week-old male broiler chicks fed different levels of isoleucine and valine, 103 (2003) 171

Vancomycin

The use of a model ileum to investigate the effects of novel and existing antimicrobials on indigenous porcine gastrointestinal microflora: using vancomycin as an example, 103 (2003) 123

Viscosity

Use of triticale alone and in combination with wheat or maize: effects of diet type and enzyme supplementation on hen performance, egg

quality, organ weights, intestinal viscosity and digestive system characteristics, 105 (2003) 149

Vitamin B₁₂

Effect of low levels of dietary cobalt on apparent nutrient digestibility in Omani goats, 109 (2003) 209

Vitamin E

Effects of source and level of magnesium and Vitamin E on prevention of hepatic peroxidation and oxidative deterioration of broiler meat, 107 (2003) 143

Volatile fatty acids

Effect of increasing availability of water-soluble carbohydrates on in vitro rumen fermentation, 104 (2003) 59

W

Water soluble carbohydrates

Effect of increasing availability of water-soluble carbohydrates on in vitro rumen fermentation, 104 (2003) 59

Ensiling forage garland (*Chrysanthemum coronarium* L.) at two stages of maturity and at different wilting levels, 108 (2003) 181

Weaning

Effects of different sources and levels of dietary fibre in diets on performance, digesta characteristics and antibiotic treatment of pigs after weaning, 107 (2003) 129

Weed

Nutritional quality and yield of seedling alfalfa established with a barley companion crop and weeds, 103 (2003) 163

Weight

Effect of feed restriction on compensatory growth of Arsi (*Bos indicus*) bulls, 103 (2003) 29

Weight gain

Performance of beef cattle grazing oats supplemented with energy, escape protein or high quality hay, 105 (2003) 29

Nutritive value of *Ficus religiosa* in West African dwarf goats, 105 (2003) 71

Wheat

Effect of chemical content and physical characteristics on nutritional value of wheat, barley and oats for poultry, 102 (2002) 71

Phytate degradation in soaked and fermented liquid feed—effect of diet, time of soaking, heat treatment, phytase activity, pH and temperature, 103 (2003) 141

Effects of lactic acid fermentation on wheat and barley carbohydrate composition and production performance in the chicken, 105 (2003) 135

Use of triticale alone and in combination with wheat or maize: effects of diet type and enzyme supplementation on hen performance, egg quality, organ weights, intestinal viscosity and digestive system characteristics, 105 (2003) 149

Wheat bran

Ileal and total tract digestibility, and protein and fat balance in pigs fed rice with addition of potato starch, sugar beet pulp or wheat bran, 102 (2002) 125

Wheat grain

Effect of specific weight on the metabolizable energy content of four cultivars of wheat grain in ewes, 105 (2003) 215

Wheat straw

Effect of cold process monensin enriched urea molasses mineral blocks on performance of crossbred calves fed a wheat straw based diet, 103 (2003) 51

Whole crop wheat

Changes in chemical composition and nutritive value of urea treated whole crop wheat during exposure to air, 102 (2002) 181

Nutritive value of whole crop wheat silage harvested at three stages of maturity, 103 (2003) 85

Whole wheat

Effect of different choice feeding methods based on whole wheat on performance of male broiler chickens, 106 (2003) 131

Willow (*Salix* sp.)

Willow (*Salix* sp.) as a supplement for grazing cattle under drought conditions, 104 (2003) 1

Wilting

Ensiling forage garland (*Chrysanthemum coronarium* L.) at two stages of maturity and at different wilting levels, 108 (2003) 181

Wool

Effects of oilseed meal and grain-urea supplements fed infrequently on digestion in sheep. 1. Low quality grass hay diets, 110 (2003) 75

Effects of oilseed meals and grain-urea supplements fed infrequently on digestion in sheep. 2. Cereal straw diets, 110 (2003) 95

X**Xylanase**

The effect of genotype and dietary fibre level on the caecal bacterial enzyme activity of young piglets: digestive consequences, 106 (2003) 119

Xylose

Rumen degradability characteristics of xylose treated canola and soybean meals, 107 (2003) 211

Y**Yeast**

Effects of dietary oligosaccharides on microbial diversity and fructo-oligosaccharide degrading bacteria in faeces of piglets post-weaning, 109 (2003) 133

Yield

Nutritional quality and yield of seedling alfalfa established with a barley companion crop and weeds, 103 (2003) 163

Young animal

A review of interactions between dietary fibre and the intestinal mucosa, and their consequences on digestive health in young non-ruminant animals, 108 (2003) 95

Z**Zinc**

Relative bioavailability of organic zinc sources based on tissue zinc and metallothionein in chicks fed conventional dietary zinc concentrations, 101 (2002) 161

